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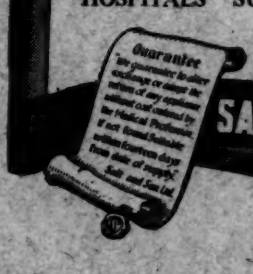

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BRITISH MEDICAL JOURNAL

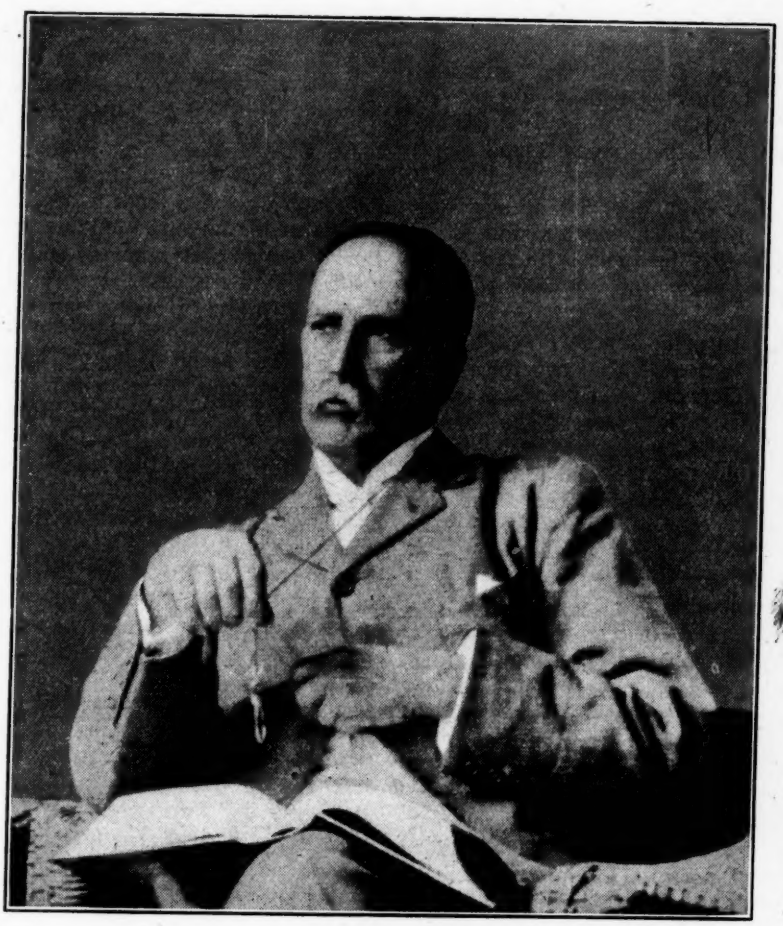
LONDON SATURDAY JULY 9 1949

SIR WILLIAM OSLER

BY

Sir ARTHUR S. MacNALTY, K.C.B., M.A., M.D., F.R.C.P., F.R.C.S.

"We are often made to feel that there is another youth and age than that which is measured from the year of our natural birth." These words of Emerson's come to one's mind in this centenary year of Sir William Osler's birth. For his teaching and influence are ever-present and in his lifetime he never grew old.



William Osler, the youngest and sixth son in a family of nine, was born on July 12, 1849, in a parsonage at Bond Head, Tecumseth County, Canada. He came of Cornish stock. His father, the Rev. Featherstone Lake Osler, married Ellen Free Pickton in 1837, and they went out to Canada from Falmouth in the same year. Mrs. Osler died in 1907 in her 101st year.

Work on Zoology and Physiology

William's schoolmaster, the Rev. W. A. Johnson, at Weston, near Toronto, introduced him to the study of biology and geology and to the use of the microscope. At 18 years of age Osler began to describe and enumerate the *Diatomaceae* of Canada, and his interest in biology was stimulated further by Dr. James Bovell when he entered the Toronto Medical School in 1868. He published a number of original papers on this subject. In 1870 he became a medical student of McGill University, Montreal, where the clinical opportunities far exceeded those which Toronto then afforded. He graduated M.D. in 1872, and in 1872–3 spent fifteen months in the Physiological Laboratory, University College, London, working at physiology and histology under Professor Burdon-Sanderson. Here he made an important contribution to scientific knowledge by describing the form and movement of the blood platelets, "the third element of the blood." It was Osler who first saw these bodies in the circulating blood, and his observations were presented before the Royal Society by Burdon-Sanderson in 1874. Afterwards Osler published several papers and lectures on the blood, including one on the development of blood corpuscles in the bone marrow. All this work established his reputation as an original investigator.

After obtaining the L.R.C.P.Lond., and visiting Berlin and Vienna, Osler returned to Montreal in 1874 and was appointed Professor of Institutes of Medicine to teach physiology and histology. As professor of physiology in the Veterinary College, Montreal, he also worked at comparative pathology. In 1878 he was elected physician to the General Hospital, Montreal, and immediately afterwards left for London to take the M.R.C.P. examination and to pursue three months' clinical study at the chief teaching hospitals. In addition to clinical work he did an extraordinary amount of original investigation in biology, physiology, and pathology during these years at Montreal. The call to Philadelphia to be professor of clinical medicine in the University of Pennsylvania in 1884 marks the end of Osler's investigations as a pure scientist in the fields of zoology and physiology. As W. T. Councilman said: "He could easily have become a great scientist, but he chose the path which led to the formation of the great clinician which he became; a worthy associate of the great men who have made English medicine famous."

Productive Years in Baltimore

In 1884, together with Clifford Allbutt, he was elected a Fellow of the Royal College of Physicians after the shortest possible period of probation. In the following year he delivered the Goulstonian Lectures to the College on malignant endocarditis, which contained the first comphrehensive account of the disease in English. At Philadelphia he increased his reputation as physician and teacher, studied malaria, and wrote on the cerebral palsies of children in addition to contributing numerous articles to textbooks and medical journals. The Quaker City would have fain kept Osler, but this was not possible. In 1888 he was offered, and accepted, the chair of medicine in the new Johns Hopkins University, Baltimore. Here he built up a great medical school which became famous not only in America but throughout the world. He devoted special attention to the organization of the Johns Hopkins Hospital, where he was physician-in-chief. From an extensive experience of medical schools in two continents Osler welded together the best features of British teaching and of the German clinics. He revolutionized medical instruction in North America by introducing the individual bedside teaching of students, who as clinical clerks had free access to the wards and patients in a clinic under a director with highly trained assistants and laboratory equipment. Osler indeed desired no epitaph other than that "he taught medical students in the wards."

Dr. Welch, the Professor of Pathology, collaborated with Osler in this pioneer work. When Dr. Welch honoured me with a visit in Whitehall in 1920 he spoke with feeling of those happy and productive years with his colleague and friend in Baltimore.

In 1892 Osler gave to the world his famous *Principles and Practice of Medicine*, used by students all over the world and translated into French, German, Spanish, and Chinese. As Harvey Cushing, his biographer, wrote: "The volume, indeed, was what might be called a practical pathology in which were given the results of modern investigation, microscopical, bacteriological, and chemical. On this foundation was built up the symptomatology and diagnosis of disease. . . ." Osler adorned his textbook with personal references to his vast clinical experience, and attractive allusions to personalities, ancient and modern, in illustrations of symptoms and treatment.

On Feb. 4, 1892, the day of its publication, Osler, with a copy under his arm, walked into a house in Baltimore where Mrs. Gross, the widow of Dr. S. W. Gross, his friend at Philadelphia, was staying, and threw the volume into her lap with the words: "There, take the darn thing! Now what are you going to do with the man?" They were married on May 8, Osler then being 42 years of age, and after a visit to Canada and England settled down in No. 1, West Franklin Street, Baltimore, where on Dec. 28, 1895, their son Edward Revere was born.

Grace Revere Osler was descended from Paul Revere, the hero of the famous ride and a distinguished silversmith and copperplate engraver. Witty, wise, and eminently practical, she was a devoted helpmeet to Sir William, entertained his friends and students, lightened the burden of his constant labours, and made their homes at Baltimore and Oxford a Mecca of hospitality and good will. Lady Osler had great personal beauty in youth, and in old age retained her wonted charm. Under a dignified presence—she was often compared to a duchess—she had the kindest and most generous of hearts. It was an ideal union, and at a farewell dinner given to Osler by the profession of the United States and Canada in 1905 Osler said: "Of the greatest of all happiness I cannot speak—of my home. Many of you know it, and that is enough." He was elected a Fellow of the Royal Society in 1898.

In 1904 Osler attended the Annual Meeting of the British Medical Association at Oxford and received an Honorary D.Sc. from the University. His former teacher, Sir John Burdon-Sanderson, the retiring Regius Professor of Medicine, asked him to accept nomination as his successor. Osler at 56 was feeling the strain of his over-busy life at Baltimore, and when he cabled to his wife on the subject she at once replied, "Don't procrastinate; accept at once." They left America amid universal regret and came to Oxford in 1905, eventually to reside at 13, Norham Gardens, which soon became known as "The Open Arms."

During the Philadelphia and Baltimore periods other universities had offered Osler appointments of distinction. His *alma mater*, McGill, asked him to return to Montreal on at least two occasions. Harvard thrice offered him chairs of medicine. In 1895 New York City offered him a university post. In 1900, on the invitation of E. A. Schäfer and others, he actually became a candidate for the chair of medicine at Edinburgh, but withdrew on account of pressure from all sides to keep him at Baltimore.

Activities at Oxford

At Oxford the Oslers were at once plunged in all sorts of activities—social, professorial, and professional. Although elected a student of Christ Church, the College of two of his favourite authors, Richard Burton and John Locke, Osler's tireless energy could never allow him to lead a life of scholarly ease. He was active as physician to the Radcliffe Infirmary, giving ward demonstrations to students and practitioners. He promoted and extended the work of the Oxford Medical School, was Master of the five-centuries-old almshouse at Ewelme, curator of the Bodleian (University) Library, where his profound bibliographical knowledge and love of old books was of great value, at one time member of the Hebdomadal Council which governs the University, President of the Oxfordshire Association for the Prevention of Tuberculosis, one of the founders and the first President of the Section of the History of Medicine of the Royal Society of Medicine—the catalogue of official duties is almost an endless one. He served on two Royal Commissions, and throughout England, Wales, Scotland, and Ireland was in constant request to deliver lectures and addresses at hospitals, universities, and medical societies. He was often called into consultation not only at Oxford but all over the kingdom. With it all he found time for countless unrecorded acts of kindness to others just as he had done in Montreal, Philadelphia, and Baltimore.

In 1906 Osler delivered to the Royal College of Physicians the Harveian Oration, "The Growth of Truth, as Illustrated in the Discovery of the Circulation of the Blood," and the Lumleian Lectures in 1910, on angina pectoris; in 1908 he gave the Linacre Lecture at St. John's College, Cambridge; in 1919, as president of the Classical Association, an office held for the first time by a practising physician, he gave an eloquent address on "The Old Humanities and the New Science."

The *Quarterly Journal of Medicine* and the Association of Physicians of Great Britain and Ireland came into existence in 1907 largely as the result of Osler's initiative and support.

He had been a book-collector for many years, and his superb library contained many *incunabula* and first editions of scientific and medical works. For over five years his

scanty leisure was occupied in preparing the *Bibliotheca Osleriana*, a bio-bibliographical catalogue of his library. It was successfully completed and published in 1929 by his cousin, Dr. W. W. Francis, with the collaboration of R. H. Hill, of the Bodleian, and Dr. Archibald Malloch, now librarian of the New York Academy of Medicine. The library itself was bequeathed with an endowment to McGill University, Montreal.

It has been possible here to mention only the more important of Sir William's writings. His published books, papers, lectures, and addresses covered an extremely wide range and mounted up to more than a thousand, as can be seen from the classified and annotated bibliography by Dr. Maude E. Abbott (Montreal, Canada, 2nd edition, 1939). "So wide are they," wrote Sir Humphry Rolleston, "that any writer, especially with a new idea, observation, or historical subject, would be well advised to find out before publication what Osler may have said upon the subject." His literary style was delightful, adorned with wit, epigram, and historical allusions, and all he wrote possessed the merit of clear exposition. These features are well displayed in his essays, *Aequanimitas* (1904) and *An Alabama Student* (1908). Sir William Osler was the pre-eminent type of the scholarly physician.

Thus, although Osler had accepted the Regius Chair as a relief from overwhelming pressure, his public activities expanded instead of diminishing. In the Coronation Honours of King George V, in June, 1911, his outstanding services were recognized by a baronetcy. Subsequently he was sounded on whether he would accept a peerage, but he declined.

The War Period

The war of 1914–18 came and added to his labours. He was an honorary colonel and a member of committees at the War Office, where on medical questions, such as the establishment of special hospitals, his advice and suggestions were invaluable. He was also on the committee concerned with the Medical History of the War and on the War Reports Committee. He rendered important services to the Canadian Army Medical Corps. As consulting physician he visited regularly the Duchess of Connaught's Red Cross Hospital at Taplow, Beachborough, the Heart Hospitals at Hampstead and Colchester, and the American Hospital at Paignton. Later he visited nearly all the American hospitals in the south of England. At these visits he renewed acquaintance with many of his old friends and students. On the receipt of a cable from an anxious parent he would visit any hospital in England to see a Canadian or American soldier and reply that he had seen that everything possible was being done.

Sir William said at a farewell dinner on May 2, 1905, in New York, that he desired "to be ready when the day of sorrow and grief came to meet it with the courage befitting a man." Noble words fraught with sad premonition. On Aug. 30, 1917, their gallant son, so full of life and promise, died of wounds in Belgium. That very night his stricken father wrote: "Poor Grace! it hits her hard; but we are both going to be brave and take up what is left of life as though he were with us."

Brave indeed was the face they presented to the world. They carried on in the same way, with lavish hospitality, the promotion of cordial relations between North America and England, and a host of medical activities. Only those who knew them well realized the sorrow that lay beneath. Sir William's hair grew white, his face was lined with care, but he continued to work for humanity. His seventieth birthday in 1919 called forth an outburst of universal affection. The medical journals in Great Britain and the Dominions and in the United States issued special "Osler Numbers," and from near and far people vied with one another in paying him loving tributes. A memorial in two volumes, containing contributions by a number of his old friends and pupils from both sides of the Atlantic, was presented to him by his brother Regius of Cambridge, Sir Clifford Allbutt, at the Royal Society of Medicine. The Oxford Medical Graduates Club entertained Sir William at a dinner, and in reply to the enthusiastic toast of his health he said: "I have worked hard all my life. There must be good rubber in my arteries or I should not now be among you still working at three-score years and ten." But even then Mr. Great-heart's course was nearly run. In October, 1919, he fell ill with influenza, and broncho-pneumonia supervened. In bed he read and wrote. His last published paper was a review of *Sir Victor Horsley's Life*, by Stephen Paget, for the *Oxford Magazine*. He kept careful notes of his own symptoms and, cheery as he strove to be to his wife, doctors, nurses, and visitors, he knew that the call had come to cross the River. "I smell the mould above the rose," he said, quoting Thomas Hood's *Stanzas*. The end came in the afternoon of Dec. 29. There was an impressive service in Christ Church Cathedral, Oxford, on Jan. 1, 1920, when men and women gathered from all parts of the kingdom to pay their last tribute to the beloved physician. His ashes, mingled with those of Lady Osler, who died in 1928, repose in an urn in the Osler Library of McGill University, surrounded by the books so dear to him.

William Osler departed from the world leaving behind him the memory of a great physician, a physician of two continents, an inspiration to British, Canadian, and American medicine, a friend of young and old. His teaching and work are an ever-abiding presence not only to those who knew and loved him but to future generations.

OSLER AT OXFORD

BY

Sir CHARLES SHERRINGTON, O.M., G.B.E., F.R.S.

Osler at Oxford! The impression left upon me is vivid enough, although I feel it far from easy to convey. It had its different sides. My privilege was to join him as a colleague in the teaching when he was still relatively a new-comer to the place. I think he regarded his chair—the Regius Chair of Medicine (attached to Christ Church)—as legitimately to be treated as a sort of sinecure; its very stipend was then rather beggarly, and Osler sometimes did not scruple to say so. He looked upon what was expected of him, not, I fancy, as in any ordinary sense a part of the routine teaching of medicine, but rather as a focal point whither to draw together the scattered strands of tradition pertaining to an ancient Faculty, some of them beginning to wear thin. I think he felt what was incumbent on him was to maintain a stately but rather formal professional intercourse, a picturesque ceremonial furbished with tags of scholastic learning, a certain dignity of custom, and the observance of loyalty to certain past ways. In a number of these features Oxford resembled its sister on "reverend" Camus; and Osler was deeply gratified to have as his opposite number Clifford Allbutt, a classical scholar as well as a close friend.

Canadian by birth and upbringing, his ties with the Empire formed a cherished background to his life. The annals of European Medicine were familiar and dear to

him, and that his position should link him with Linacre, Sydenham, and Harvey rose, I think, almost daily to his thought. Not that he lived in the past; rather he trod a stage whose scenery was much of it furnished from the past. The very buildings had their fascination for him. Once as I walked alongside him across the open space between the Camera, the Bodleian, and All Souls, he stopped and, looking round, said: "The finest architectural view in Europe."

Love of Rare Books

One of the happinesses he cultivated in Oxford was to serve as showman to parties of transatlantic visitors and to introduce them to his favourite glimpses of the University scene—a personally conducted tour, leading finally to lunch at his own house with Lady Osler at the table. The number of guests might be anything up to fifteen or sixteen, and the hostess had little notice of exactly how many there would be. But the babble of conversation was unceasing, and their host seemed able to address them each one intimately—Tom, Jack, Jim, or whatever familiarity dictated. One regular item of their entertainment, laid out for their inspection in a small well-windowed room opposite the "Study," would be some dozen or so choice printed books, each volume open at a selected place. These specimen volumes would include first-rate rarities—a fifteenth-century Aristotle from a Paris press, a Descartes' *Method*, etc.

His library was housed mainly in one large room with open shelves reaching to the ceiling and a couple of turntable bookcases, one of them completely filled with editions of his favourite among all books, Sir Thomas Browne's *Religio Medici*. When he resided at Oxford he was engaged in cataloguing his library on a novel plan—a *Bibliotheca prima*, etc. After Osler's death this catalogue was completed by Dr. William Francis, and issued at the Clarendon Press, at the charge of Lady Osler, in a fine folio volume. The books themselves were bequeathed by him to the McGill University library, Montreal. So far as I know he kept none of his books under lock and key, although he was well aware of the frailty besetting certain book-collectors and could relate instances within his own experience. In the Preface to his monumental catalogue he gives some anecdotes of his own adventures in pursuit of specially desirable volumes. His book-collecting seemed to be a "catching complaint," for I think we may suppose it was started in Harvey Cushing—and in others—by Osler himself. A well-known bookseller in London used to say that he attributed to Osler's influence no small share in the increased antiquarian interest taken in early printed books on both sides of the Atlantic. Osler was certainly a most intriguing devotee of the fashion.

A Special Interest

One of the adjuncts of the Oxford chair exerted quite a special appeal on Osler. In virtue of his tenure of the chair he was Master of an ancient almshouse some ten miles out of Oxford, a picturesque low-roofed cloistered building dating from the foundation of the charity, and enclosing perhaps half an acre of plotted garden. The apartments of the old pensioners themselves faced inwards towards this court. The whole stood in a small village which in itself was old-world, rural, and intersected by little running streams or "freshets" full of watercress grown for the London market. Lady Osler made herself unobtrusively a fairy godmother to these aged dependants. Osler as Master had a couple of rooms under the common roof. I happened to be present when he noticed a sort of strong-box in his bedchamber there. The key, when inquired for, was not to be found, and Osler, thoroughly intrigued, wired to Chubb's, of London, for an expert to pick the ancient lock. The expert when he came looked at the chest, then, taking a small wooden mallet from his travelling-bag, tapped the sides of the lid and almost at once lifted it. "This chest has not been locked these many years," he said. The box contained deeds, many of them on vellum with seals attached, each seal in its little case fixed to the ribbon belonging to the document. Osler was enchanted. All the way home he could speak of nothing else.

As Consultant

I fancy that his opinion was considerably sought as a consultant during his Oxford years. I was present once when it was—unofficially—appealed to. It interested me to see his manner change at once. It became gravely professional. His voice assumed a deeper tone, his forehead frowned slightly; his lips tightened, his bearing became dramatic and oracular—kindly always, but now dispensing kindness oracularly. His position in Oxford was such that he allowed himself to call on sick people independently of invitation from their doctor. William Macdougall, the psychologist, was then in Oxford, and I knew him well. He told me the following. His youngest child, a little maid of 7, was fatally ill. One afternoon Osler called, and after talking with Macdougall they both went upstairs to the child's room. Outside her room Osler suddenly stopped and tapped at the bottom of the door. Then, opening it, he stole across to the child's bed with little steps and knees bent to dwarf himself as much as possible, his coat-flaps nearly touching the floor, his face on a level with the child's in bed. The child gazed wonderingly at him. "Mary," Osler said, assuming a small bird-like voice, "I am come to tell you a secret—a nice secret. You are going soon to leave us. You will be leaving on a journey, to a beautiful place, a wonderful place where you will be very, very happy. And all your friends will soon be coming there to join you. I can't stay longer now; I must run off. Good-bye, Mary; God bless you." And he kissed the child gently on the forehead. Then he withdrew as he had come, the little girl watching him wonderingly with a long smile.

Osler's Son

Osler himself had one child, a son, about to enter Christ Church when the first world war broke out. Revere shared some of the tastes of his father, and the pair were in several ways almost like schoolfellows together. The world war had been expected by many, but not by Osler. When it came Osler's parental anxiety was pathetic to see. After a year of delay his son was called up for military training; then, rather more than a year later still, for service abroad. Almost at once (1917) tragedy happened—a chance shell from a far range. The surgeon nearest at hand was the old family friend Harvey Cushing; but there was nothing to be done. To Osler the news was overwhelming. He strove on bravely but hopelessly. The laboratory attendants hearing his step declared it was no longer as it had been. As the year 1919 drew near its close, wintry weather caught him in a hired car far from home in a lonely place towards nightfall, and the car broke down. He and the chauffeur had to pass the night there, and he was chilled through. A day later he arrived home looking ill. He went to bed; bronchopneumonia set in. After some weeks he died, exhausted.

At the funeral service the Cathedral was filled to overflowing—friends attended not only from Oxford but from long distances.

I am not competent even to attempt any judgment of Osler's distinction as a clinician. He had of course a certain position as a man of letters. His literary style was rather obviously formed on his prime favourite, Browne of the *Religio*, without the redundant wealth of classical allusion. One conviction about Osler's influence on his time, of which I am quite sure and to which I would here bear witness, regards the remarkable camaraderie and personal affection which radiated from him. It stood for friendships which were lifelong ties. It was contagious. It propagated itself along his social contacts wherever he moved. His unlocked bookshelves were a part of it. In Baltimore, when he and Cushing occupied adjoining houses, doorways were cut through on each floor to facilitate communication between the households.

THE OSLER FAMILY

BY

W. W. FRANCIS, M.D.

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Osler's ancestors were seafarers of Falmouth, small shipowners, privateersmen, and merchants. His great-grandfather died of wounds in the West Indies; one great-uncle was killed in a sea fight, and another successfully fought off the Barbary pirates from a shipload of settlers he was taking to the Cape. His descendants are numerous in South Africa and Australia—some of them physicians, some cricketers, and a few both. Osler's great-grandmother, a sister of Samuel Drew, "the Cornish metaphysician," is suspected of having infused brains into the line, and it is certain that cheerfulness was irradiated by his grandmother, Mary Osler, better known to the end of her long life as Polly Paddy.

The statement in a recent biography of Sir Jonathan Hutchinson that he and Osler had common collaterals in Lincolnshire is a mistake: Lady Osler, not Sir William, was descended from the learned Anne Hutchinson, who in 1643 was massacred with all but one of her seventeen children near what is now New York.

Change in Bent

With the religious revival in the early nineteenth century the bent of the family changed. Of the five sons of Osler's grandfather, the eldest was a surgeon and an ardent churchman, and two became missionaries. Edward Osler (1798–1863), who attained the distinction of a notice in the *Dictionary of National Biography*, qualified M.R.C.S. at Guy's and St. Thomas's after an apprenticeship with a surgeon in Truro. His MS. eye-witness account of Cooper's famous ligation of the aorta is in the Wills Library. Becalmed on the way to London in 1816 in one of his father's packets, they were jeered one evening by a passing newfangled steamer, but had the satisfaction of overtaking it next morning and offering a tow! For seven years house-surgeon of the Swansea Infirmary, he afterwards practised at Bath and Truro. He is better known as a miscellaneous writer, author of *Church and King*, *The Life of Admiral Viscount Exmouth*, and poems; a hymn-writer ("O God unseen, yet ever near," is almost the sole survivor); and editor of the *Cornwall Gazette* for twenty years. Biological papers of his on marine animalcules were presented to the Royal Society and printed in the *Transactions*. All that I, his grandson, ever heard of his surgical practice is that he was delighted to be summoned one morning to a grand house in the country, and on arrival was told by a supercilious butler to wait in the hall till her ladyship should be ready. Not he! The house had a famous library, to which he found his own way. It was mid afternoon when he remembered what he had come for! His only descendants are in Canada, where his two daughters were a great help to Osler in his Montreal years.

Sir William's Parents

Featherstone Lake Osler (1805–95), the father of Sir William, was a venturesome lad who was sent to school inland to keep him from drowning; but at the age of 12 he was at sea and nearly lost his life in his first wreck. He then joined the Royal Navy and saw varied service in several ships, including the *Victory*, and rose to the rank of lieutenant. Having become something of a student, especially of mathematics, he entered St. Catherine's Hall, Cambridge, in 1833, with a view to taking orders. Thanks to an influential godfather, his prospects in the Church were particularly bright, but in 1836, in answer to a strong appeal, the Upper Canada Clergy Society was formed and he was persuaded that his duty lay there. The next year found him and his bride in what were then the wilds of Canada, forty miles north of Toronto. Undaunted by the incredible hardships of the first few years, they laboured here for two decades, teaching everything from theology to agriculture and sewing. He held services in twenty different places scattered over 2,000 square miles of country. At some distant gatherings he would announce the date of the next service six months or more hence, and the congregation would be there without, as he said, any further notice. One sees where W. O. got his punctuality! The parson's household—when he managed to get a house built—comprised at one time, besides his growing family, five young men whom he was training for the ministry. These included his youngest brother, Henry (1815–1902). A breakdown in health occasioned a visit home in 1841, and the most useful gift, besides money, which he brought back was many dozen pairs of spectacles for those of his flock with failing eyesight.

Osler's mother, Ellen Free Pickton (1806–1907), was a really remarkable woman, small in build and stature, but with tireless energy. Dark as her husband was fair, she was a Cornish "Black Celt," with beautiful features, enlivened by an unfailing wit and good humour, which more than matched her piety. Her influence was long remembered. Girls came from miles around to her Sunday school and to her Thursday afternoon class, which was meant to teach sewing but included everything. Usually thirty would arrive early in the morning and stay all day. Her greatest achievement, however, was bringing into the world and bringing up in the backwoods no fewer than nine children despite her late start; for she was 30 when she married in 1837. She lived to enjoy her hundredth birthday, but left it to her great-grandchildren to blow out the one hundred candles on it. Did it remind her of her first Sunday-school picnic, when she baked three barrels of flour into cakes and bread and fed seven hundred from twelve of her husband's nearest settlements?

Children of Distinction

Brought up by such parents under pioneering conditions in a country parsonage where helpfulness and self-reliance were the order of the day, no wonder that four of the six sons attained distinction. They were educated at an excellent grammar school in Barrie, sixteen miles from their home, and the elder three later studied law in Toronto. When William was 6 the family moved to Dundas, in a

much more advanced district where the amenities were greater and life less strenuous. Unfortunately, little is recorded of the children's younger days, except some of W. O.'s escapades, such as cutting off the tip of his sister's finger, "smoking out the old girl"—namely, the school's unpopular housekeeper—for which he spent a day in gaol and was fined a dollar and costs; or his earliest recollection, which he told so often that he came to believe he could remember how, in his second year, the day his younger sister was born, a calf with which he was tethered butted him into the pail of milk they were sharing and nearly drowned him. A visiting English cousin described him at 16 as "a light-hearted boy, but with many of the tastes and much of the dependableness of a man."

The eldest brother, Featherston (1838–1924), probably the most learned of the family, was thirty years on the bench and head of the commission revising the Statutes of Ontario. His three sons became distinguished lawyers. The non-medical majority of the family consider Britton, known as "B. B." (1839–1901), the most remarkable figure of them all. He was the greatest civil and criminal lawyer of Canada, the "thirteenth juryman." Some of his cases, notably his prosecution of the murderer Burchall, attracted attention in England, and it is a pity that his speeches were not collected and published. Like his medical brother, he had a thorough understanding of his fellow men, with personal magnetism, courtesy, and accessibility. The next lawyer brother, Edward (1842–1906), was early crippled with arthritis. The fourth brother, Sir Edmund, known as "E. B." (1845–1924), early went into business and became a leading financier, a director of the Canadian Pacific Railway, and a member of the Dominion parliament. That did not prevent his being a man of learning also. It was to his generosity that W. O., not four years his junior, owed his two years of postgraduate study and ready help in other financial crises. As for hospitality, at his summer place on Lake Simcoe, not far from his childhood home, I have seen fifty-six sit down to Sunday dinner. "He has the warmest heart and the most open hand of any man I know," wrote Sir William.

A year and a half ahead of W. O. came far from identical twins. The girl, a model of all the virtues, became the mother of nine of the best-looking children in Canada, while the boy became the nearest thing in the family to a dusky sheep—there was nothing black about him. His mother blamed herself for his shortcomings, as she was unable to manage both twins, and the boy was suckled by a squaw. No wonder he became a rolling stone! Whenever possible his adoring young brother used to take the blame and the punishment for Frank's peccadilloes. He ran away (800 miles!) to sea in his teens, was shanghaied, woke up on a whaler, and was missing for two years. His adventures, which included service as a *brancardier* in the Franco-Prussian War, would have been worth recording, but he was quite inarticulate, though a cheerful soul. With a devoted wife who kept the purse-strings tight and the bottle corked, he settled on a fruit farm. Their only son, a most promising young man, was killed, like W. O.'s, in the war of 1914–18. This was a new bond between the brothers, and on lugubrious occasions, such as Christmas, W. O. was not above slipping him a banknote, with disquieting results! The last I saw of the dear old fellow was in 1928 at Lady Osler's funeral. Returning from the Cathedral, we passed the end of St. Giles Street. The Fair was on; he heard the roundabouts, stopped the car, and disappeared more like an 8-year-old than an 81-year-old. He outlived them all, dying in 1932.

In 1937 there had been in America 225 descendants of the three Cornish brothers, all creditable citizens, and among them four physicians—none of the Osler name—including the lamented W. O. Abbott (1902–43), of Philadelphia, a gifted teacher (like his great-uncle) and the co-inventor of the life-saving Miller–Abbott tube.

OSLER: SOME PERSONAL RECOLLECTIONS

BY

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My first meeting with Osler was in the winter of 1904–5, when I took the M.B. at Oxford. I had made a small contribution to anatomical literature, illustrated by my own drawings, but was altogether astonished that he had read it and noticed my draughtsmanship. He found out from me that I was interested in Natural History and that I was shortly going to Malaya. A few days after I received from him some books on the fauna of that region. Later I learned to admire Osler's wonderful power of making every young man he met feel that he was in the presence of one who was taking a personal interest in him. Though this was doubtless the result of some conscious effort on Osler's part, it was certainly an effort that he loved to make, for it was a true and natural expression of the overflowing humanity that was part of him. Universal sympathy always seemed to me the essence of his greatness. His was especially a greatness of personality, and not of intellect, or of demonstrative skill, or of observational acumen, or of learning, or of literary power, though none could deny that he had all these things in good measure. I remained in some sort of relation with him for his last fifteen years, and for part of that time saw him almost daily. I am convinced that it was this universal sympathy that gave him that characteristic power to perceive and elicit the best in any companion.

What sort of figure did he seem to younger men, and why did he impress them so deeply? I can only tell how he appeared to me. He was a small, sallow, extremely dark, quickly moving man, of a lively and often puckish humour, very emotional withal and easily moved to tears, but when he was in earnest he had a grave deep voice which I learned to love. What always struck me most about his physical appearance was his lustrous, almost womanly eyes that seemed to suggest those of the Sistine Madonna. For, despite his gaiety, Osler always appeared to me as profoundly and essentially melancholy. I do not know, and there can now be none living who does know, of any deep sorrow that came to him in his earlier years, but to me he always appears as one who has passed through some tragedy to a life of human service, one who is always whispering to himself, "Down, thou climbing sorrow." It is a great and moving memory.

My contacts with Osler were naturally mainly of a literary kind and concerned especially older books and manuscripts. He was a true book-lover, to whom the very sight and touch of an ancient document brought a deep and subtle pleasure. His humanity, which seemed to me to be his leading characteristic, was especially brought out by the way in which he was constantly discerning the same essential humanness under the most different temporal, social, and personal conditions. Much of what was often regarded as his whimsicality was really a part of this search for the

man in many diversities. If he loved his books he loved the authors of them even more. His antiquarian interests were really a search for man in his diverse guises.

Thus he was a bibliographer and biographer rather than a historian in the proper sense. The literary reference-books that were most often in his hands were, I think, after the *Dictionary of Natural Biography*, Bayle and Thillaye's excellent *Biographie Médicale* and Ferguson's *Bibliotheca Chemica*, a work that contains far more than its title suggests. All are books which tell about people rather than about things. Osler was at his literary best either when he was musing on life and its vagaries or in such bio-bibliographical pamphlets as those on Servetus, on Linacre, or on Fracastorius. It is a great pity that he did not have time to treat in this way the sixteenth-century character whom he loved most of all, Conrad Gesner, for Osler bore some resemblance to Gesner in taste, in catholicity of interest, and even in personal appearance.

MY ASSOCIATION WITH OSLER

BY

LORD HORDER, G.C.V.O., M.D., F.R.C.P.

I first met Osler in England about 1900. He asked my support for his idea of an Association of Physicians, for the formation of which he was so largely responsible. Backed by his energy and influence, it was a great success from the word "Go."

We were next associated when the B.M.A. met at Leicester in 1905. Tooth opened a discussion on meningitis; I followed with an account of the lumbar puncture findings, and Osler, as a distinguished visitor, followed me. The sequence, though a logical one, was unfortunate for me—Osler's prestige was so high that the audience would barely hear me out and showed signs of impatience. "Turnips!" whispered Osler. "Your stuff is bed rock." In the years that followed I was to enjoy this kind of encouragement again and again—the encouragement of the 20-years-older man to his young colleague. I treasure a postcard which he wrote me when I was knighted in 1918: "I am glad it has come whilst the sun is on your face," it said.

In consultation Osler was profound in his knowledge of the "case," but not very impressive to the "friends." The diagnosis made, he tired a little in laying down a plan of treatment; so that it was not always easy to explain what had determined the choice of him as a final opinion.

In his last illness Osler paid me the signal compliment of asking me to go to Oxford to confer with his doctors. He was not only a very ill man, he was a man indifferent to life, so bludgeoned had he been by the loss of his beloved son. But he preserved towards us all that winning manner, and towards himself that equanimity, which we had always associated with him.

"When he came to die, Osler was, in a very real sense, the greatest physician of our time. He was one of Nature's chosen. Good looks, distinction, blithe benignant manners, a sunbright personality, radiant with kind feeling and good will toward his fellow men, an Apollonian poise, swiftness and surety of thought and speech, every gift of the gods was his; and to these were added careful training, unsurpassed clinical ability, the widest knowledge of his subject, the deepest interest in everything human, and a serene hold upon his fellows that was as a seal set upon them."—F. H. Garrison, *An Introduction to the History of Medicine*, 1929, page 631.

GRACE REVERE, LADY OSLER

BY

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Some day someone will write a long-overdue essay on the ways in which great men in our profession, and in its allied sciences, have been aided in their achievement by the selfless devotion of their wives. Meanwhile it is supremely fitting that, in an issue commemorating Sir William Osler and his varied accomplishments, Lady Osler and her contribution should receive some special mention. For it is impossible to overrate what she did to stimulate "the great physician," to help him to make right decisions, to provide him with necessary recreation at home, to entertain their numerous friends while leaving him free for his work, and in countless other ways to be his ideal partner for twenty-seven eventful years.

"No. 13"

Mr. Arnold Muirhead, Dr. Harvey Cushing, and others have written of Grace Revere with far more intimate knowledge than I can claim, and my sole justifications for producing this account are the need already mentioned in the preceding paragraph, the present preoccupation of Mr. Muirhead with other matters, and the fact that I can perhaps be regarded as representing those many who, introduced to Lady Osler but with no special claims upon her, nevertheless received a warm welcome thenceforward at No. 13, Norham Gardens, found their hostess keenly interested in their relatively minor doings, and can look back on an inspiring friendship with a truly great lady to whom they remain for ever indebted.

As an ex-Service medical student at Oxford in 1919 I was privileged to have one short talk with Sir William. The next year an American theological student with whom I shared rooms, and who had brought with him an introduction to Lady Osler, asked if he might take me with him on his next visit to "The Open Arms" at No. 13. In consequence I became a regular caller there once or twice a term during the rest of my time in Oxford, met many of the Osler circle, and added considerably to my store of happy undergraduate memories. Oxford in those days was still a dream city, with a population only a quarter of its present figure, the surrounding country unspoiled, the Cherwell an enchanted stream, the beauty of the High as yet unsullied by the vast amount of traffic which now passes through it. At that time, too, to an extent which is now quite impossible, the friendly inhabitants of North Oxford dispensed hospitality each Sunday afternoon to undergraduates and others who called upon them, and thereby contributed greatly to the pleasure of our educative years. At Lady Osler's there were often thirty or more to tea, but each visitor was conscious of a personal welcome, and each came away stimulated and inspired by the kindness and interest which he or she had encountered.

The above is a pen-picture of the early nineteen-twenties, and for more information about the central figure in it, and particularly about the qualities which made her so ideal a wife to William Osler, we turn to the excellent biography by Mr. Muirhead.*

*Mr. Muirhead has most kindly given me permission to make such use as I will of his account.—K.J.F.

Ancestry and Early Life

Grace Revere was born in Boston on June 19, 1854, with French Huguenot ancestry on her paternal side and English on her maternal side; one of her great-grandfathers was the American patriot Paul Revere, and she displayed, as did he, "a strong will, positive opinions, and a delight in emergencies which called forth all" her "power and energies." From her parents, on the other hand, she inherited sympathy with and a desire to assist others, and these traits were precociously developed through the personal losses sustained by her family during the Civil War. Through her English-style schooling under Miss Foote in Boston she derived understanding of the people with whom in the future she was to have so much to do; throughout her life, too, she was an excellent letter-writer, and had an enviable memory for names. Finally, in so far as these general notes are concerned, we recall her love of flowers and her artistry in arranging them, also that she was as beautiful in her youth as she was handsome in her later years.

Her first husband, whom she married in 1876 and who was seventeen years her senior, was Dr. Samuel Weissel Gross, of Philadelphia. His father, the leading surgeon of the city, was a widower, and the young bride acted as hostess in his home as well as in her own. So she had early experience of large-scale entertaining, and from the beginning she proved herself a most efficient housekeeper. Apart from this not unimportant social side, she brought her strong will and enthusiasm to bear on her husband's professional career, and until his premature death from pneumonia in 1889 she fired him to greater efforts whenever his own ambition and spirits were flagging.

Her Marriage to Osler

William Osler, who had come from Montreal in 1884 to the Chair of Clinical Medicine in the University of Pennsylvania, had done so largely through Dr. Gross's persuasion. In 1889 he went from Philadelphia to Johns Hopkins and set to work on his great textbook; shortly after it was finished—i.e., in 1892—he married his friend's widow. They had reached an understanding earlier, but she had insisted, as she did on many subsequent occasions, that their personal inclinations should be made subservient to the greater claims of medicine, and she had brought Osler round to her point of view. Many more items could be extracted from the story of their joint life in America and in England up to the outbreak of war in 1914, but here I shall content myself with but three. The first is an example of her decisiveness, and it is given in the cable ("Don't procrastinate: accept at once") which she sent to him when he was in doubt, in 1904, if he should allow himself to be considered for the Regius Professorship at Oxford. The second shows her sense of humour, as well as the way in which she shielded Osler from non-professional chores which many husbands undertake for, or at least share with, their wives. When they were about to leave for England she had arranged all their household packing while he went off for three days with a handbag and thereafter met her at the steamer. This unequal division of labour produced the sly remark that "Willie's motto may well be *Aequanimitas*, because he always flies when things like this are going on." The third item recalls her remarkable personality, to which all who knew her pay affectionate tribute. Shortly before her husband was designated a Baronet in the Coronation Honours List she herself was presented at Court, and the girls who were presented with her said afterwards that "she looked as though she owned the Palace and was about to ask the King and Queen to spend a few days there!"

Her Courage in Bereavement

At the outbreak of war in 1914 she and her 18-year-old son, Edward Revere Osler, had just arrived in Canada on a visit to relatives and friends. They returned at once in the same boat, now painted black—Lady Osler to devote her seemingly endless energy to all kinds of war work, Revere soon to pass into the Army and eventually to die of wounds in August, 1917, in Belgium. The courage shown by his parents in carrying on after that appalling blow is a major item in their joint story, but it needs no redescription here. I will pass instead to 1919, in July of which year Osler received world-wide tribute on his seventieth birthday only to be stricken down with illness in September and to die in December. Lady Osler's feelings on this second blow can only be imagined, and she would have been tempted to leave Oxford but for two things. In the first place, she had to arrange for the completion and cataloguing of Osler's library and its transfer to Montreal; in the second, she found the tradition of No. 13 already so great that she could best help others by remaining there to receive old friends and to welcome new ones, to pass on something of Osler's spirit to those who could appreciate it, and to give to young people some of the love which Revere had not returned to enjoy.

How well she did all these things during the next eight years is well known; how valiant an effort it must have been for her to do them in her double bereavement can only be guessed. The main tasks, at all events, had been accomplished by the time that she herself died, at No. 13 and in the presence of her sister and of Dr. John Fulton, on Aug. 31, 1928. She remains in our grateful memories as "one who has loved and worked for the profession and the sweet influences of whose home have been felt by successive generations of students."

Under the Transfer of Functions (Food and Drugs) (Scotland) Order, 1949, certain functions exercised by the Secretary of State for Scotland will be taken over by or shared with the Minister of Food. The local authorities' duties of enforcement are not affected. The Ministry of Food will be responsible for those sections of the Food and Drugs (Adulteration) Act, 1928, which imposed restrictions on the mixing of colouring and other ingredients with foods and prohibit the sale of food not of the nature, substance, or quality demanded. The Ministry will also take over the Central Department's responsibilities under the Food and Drugs Acts relating to margarine, margarine-cheese, milk-blended butter, condensed milk, and dried milk. The Secretary of State will exercise jointly with the Minister of Food the general power to make regulations concerning the composition of food and the conditions under which it is imported, prepared, transported, or sold. The Secretary of State will be concerned mainly with hygiene and the Minister of Food with labelling and composition, but the Secretary of State will remain the central authority for the purposes of the Milk and Dairies Acts and the inspection of slaughter-houses and of meat derived from home-fed animals. The two Ministers will exercise jointly the power to make regulations governing the qualifications of public analysts. The Department of Health for Scotland will continue to supervise and give guidance to local authorities on these matters. The Secretary of State, acting through the Department of Health, will continue to be the central authority in respect of drugs coming within the scope of the Food and Drugs Acts and as regards the protection of the public from infected food.

TREATMENT OF 160 CASES OF ERYTHROBLASTOSIS FOETALIS WITH REPLACEMENT TRANSFUSION*

BY

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The discovery that Rh antagonism is a cause of erythroblastosis foetalis has revolutionized the treatment of this disease. Many authors consider early induction of labour to be a method of some importance in protecting the infant as much as possible against the attack of Rh antibodies, which pass the placenta mainly towards the end of pregnancy; even caesarean section is applied to prevent their penetration during labour. However, from several points of view this measure is open to discussion. Transfusions with packed Rh-negative cells or with Rh-negative whole blood have been widely applied with success. Maternal milk is often withheld because of the possibility of Rh antibodies being harmful in the first days of life through permeability of the intestinal tract. The application of vitamin K as a protection against haemorrhagic diathesis is still in use.

Owing to the studies of Wiener *et al.* (1947), Wallerstein (1947), Diamond (1947), and other workers a new method of treatment has been introduced. The principle of this method consists in replacing the Rh-positive infant's blood by Rh-negative blood of the homologous ABO group in order to eliminate the Rh-positive red cells, which will be rapidly haemolysed. At the same time Rh antibodies in the infant's circulation are washed out.

Although the different authors base their method of treatment on the same principle, the technique can be applied in various ways.

Wallerstein's method consists of infusion of blood into one of the greater veins, the blood being withdrawn with syringes out of the sinus sagittalis longitudinalis.

Wiener uses the saphenous vein for infusion of the blood and the radial artery for bleeding. It is very important to balance the rates of inflow and egress in order to prevent plethora by too rapid a transfusion, and to prevent shock from too rapid withdrawal of blood. In order to prevent clotting of blood the child is heparinized (Wiener and Wexler, 1946). Wiener, Wexler, and Shulman (1948) succeeded very well even with massive transfusions of 1,000 ml.

Diamond's method consists in introducing a plastic catheter into the umbilical vein. The exchange (or replacement) transfusion is performed by repeatedly replacing small quantities (20 ml.) of the infant's blood by citrated fresh donor's blood. He uses a closed system with the aid of three-way valves between catheter, syringe, and blood-transfusion ampoule.

In Holland exchange transfusion was started in January, 1947, as soon as the necessary information was obtained from Diamond and Wiener (van Loghem, 1948; van Loghem *et al.*, 1948). Exchange transfusion has been performed in 160 cases in two years by 43 physicians.* Nearly all the serological examinations were carried out in the Blood Grouping Department of the Central Laboratory of the Netherlands Red Cross.

Under the direction of the Working Committee for Rh Investigation courses of instruction were given; these greatly helped in acquainting physicians with simple methods of serological Rh-investigation and with the technique of exchange transfusion.

Diamond's method is very easy to perform, and was done even 40 hours after birth. Wiener's more complicated method does not offer any special advantage, except when the umbilical vein is obliterated, and even then it may be possible to use Diamond's method in one of the greater veins (vena femoralis). In only a few transfusions have we used Wiener's system.

Recently another method has been described which offers the possibility of performing the exchange transfusion through the umbilical vein a few days after birth, when the passage of the umbilical cord is obstructed. Pinkus (1948) described a new approach to the umbilical vein above the insertion of the umbilical cord.

Method of Treatment

Through lack of the plastic catheters recommended by Diamond one of us (Soeters, 1947) tried a rubber nelaton catheter which has now come into general use (No. 6—inner diameter 1 mm., outer diameter 2.6 mm. No. 8—inner diameter 1.5 mm., outer diameter 3.1 mm.—is also very useful). These catheters are very easy to insert into the umbilical vein. They are slightly modified—the end of the catheters being opened to facilitate the inflow of blood, or even cut off and well polished. One advantage they have over plastic catheters is that they are easy to sterilize by boiling and are very elastic. Furthermore, the end not being sharp, there is no danger of damaging the venous wall. A small glass tube is inserted between the rubber catheter and the adapter in order to control the inflow of blood and to prevent the inlet of bubbles of air. During the exchange of syringes the catheter is carefully closed by arterial forceps. One should be very careful in using the syringes. After every withdrawal and injection of blood they should be thoroughly washed in saline with heparin, and afterwards in pure saline. We use syringes of 20 ml. An assistant fills the syringes while the physician injects and withdraws the blood.

Heparinized blood is mostly employed for the exchange transfusion. "Heparine vitrum" (Brocades and Stheemann, Amsterdam), 20 mg. in 10 ml. of saline, is mixed with 500 ml. of donor blood of the homologous blood group. Heparinized blood should be administered within a few hours after taking, because heparin is apt to denaturate rather quickly. In general the infant is not heparinized. During the exchange transfusion the catheter is washed a few times with 1 or 2 ml. of a weak solution of heparin (2 mg. of heparin per ml.) in order to prevent clotting in the catheter. In our experience this is quite sufficient, although some prefer to heparinize the child by the injection of 10 mg. of heparin into the umbilical vein or intramuscularly before beginning the exchange transfusion.

If citrated blood is used, 90 ml. of 3.3% disodium citrate and 15% glucose is sufficient for 500 ml. of blood. Mollison

*Report of the Dutch Foundation for Blood Group Research.

*We are greatly indebted to all the physicians who have provided us with detailed clinical data of their exsanguinated babies and the necessary information about the histories of the pregnancies.

and Cutbush (1948) use the same quantity, 2.5 g. of disodium citrate and 3 g. of glucose, but dissolved in 50 ml. of distilled water, which has the advantage of preventing dilution of the blood so far as is possible. To increase the haemoglobin content of red cells of the donor blood Mollison eliminates about 50–100 ml. of the supernatant plasma citrate. By using citrated blood there is some risk of causing tetany by hypocalcaemia. About 5 ml. of a 10% solution of calcium gluconate is equivalent to the prescribed quantity of disodium citrate. To prevent tetany small quantities of calcium gluconate solution may be injected intravenously (about 1 ml. after every 100 ml. of citrated blood). It is also possible to administer calcium gluconate through the catheter, but previously the catheter should be washed carefully with saline in order to prevent clotting due to the presence of citrated blood.

As nearly all mothers of erythroblastotic children were submitted to an antenatal examination and were admitted to the hospital before delivery, it was possible to perform the exchange transfusion in nearly all cases immediately after birth, which has the advantage that the procedure goes very smoothly because of the free passage through the umbilical vein. It is also important from a therapeutic point of view to remove the Rh-positive blood and the Rh antibodies as soon as possible.

The infant is placed on an operation table in a well-heated room and held by a nurse. After disinfecting the abdominal skin with iodine the child is covered with sterile blankets and kept warm with electric cushions. Through the window (2 by 12 cm.) in the blanket the umbilical cord is brought outside. The operator, assistant, and nurse should take all the aseptic precautions necessary for an ordinary operation.

Before inserting the catheter the umbilical cord is cut off at a distance of about 1 or 2 cm. The cord is kept open with two forceps by an assistant, and the catheter is inserted into the great umbilical vein (6–8 cm.).

A stricture caused by fibrous tissue in the linea alba may obstruct the introduction of the catheter. It is always possible to pass this stricture—if necessary by dilatation by means of a sound. In any case it is advisable to cut off the cord very close to the skin to avoid unnecessary difficulty.

One of us (J.M.S.) studied the venous system of the newborn by means of *x*-ray photographs of cadavers after filling the venous system with thorotrast. In this way the catheter's route could be followed. It is possible to insert

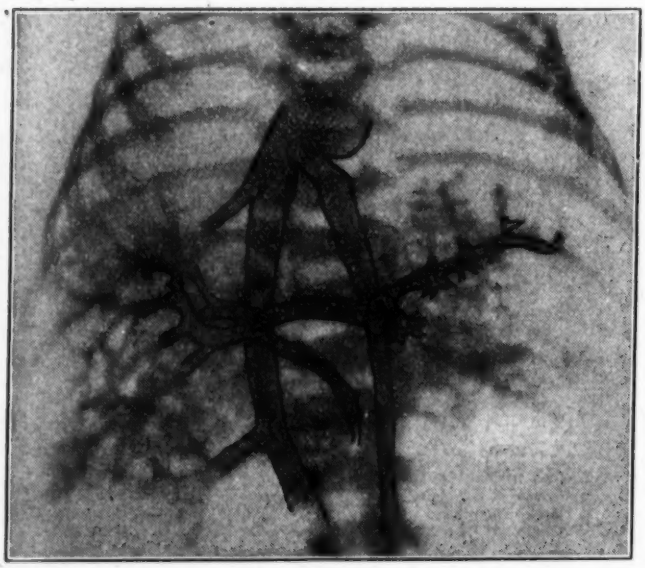


FIG. 1

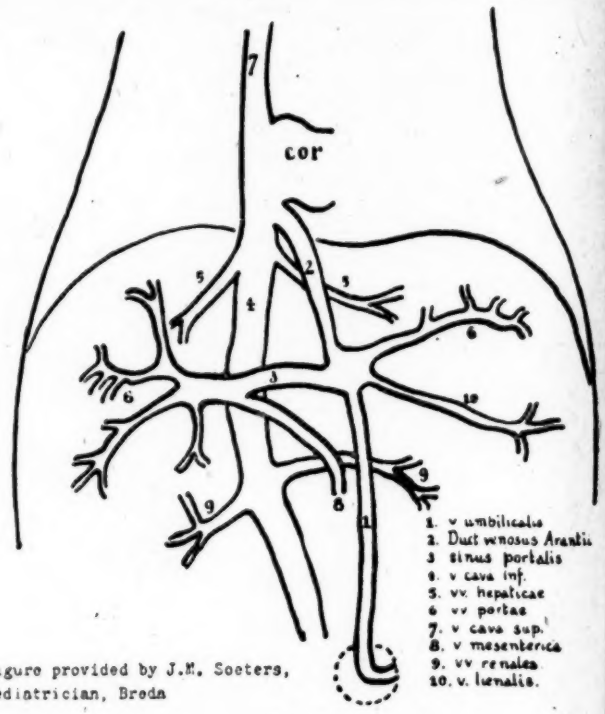


Figure provided by J.M. Soeters, pediatrician, Breda

FIG. 2

the catheter up to the vena jugularis. It passes the vena umbilicalis, sinus portalis, ductus venosus Arantii, vena cava inferior, vena cava superior, and the vena axillaris (see Figs. 1 and 2). Sometimes it is difficult to bring the catheter into the ductus venosus Arantii because of the stricture of the distal part of the duct, when the catheter is apt to turn off to the left or right side into the branches of the portal vein. When the catheter has been inserted to a length of about 12–14 cm. it has reached the vena cava inferior. A stoppage at about 11 cm. indicates that the catheter has entered the left or right portal branches.

The withdrawal of blood from the vena cava inferior proceeds very smoothly; in the sinus portalis it is rather difficult. Most of us have found that it is not necessary to insert the catheter up to 14 cm., but that the withdrawal and injection of blood is very easy to perform after inserting the catheter into the umbilical vein for 6–8 cm.

The catheter is filled with saline and closed with arterial forceps. When the catheter has reached its right place a syringe filled with saline is fitted on to the catheter. The arterial forceps is now removed and a small amount of saline is injected very carefully. When this can be done smoothly, an attempt is made to withdraw the baby's blood. Sometimes it takes a few moments to find the right place in the umbilical vein for the injection and withdrawal of blood.

The quantities of aspirated and injected blood are carefully measured in order to prevent overdosage. In cases of severe anaemia a supplementary injection of blood (maximum 50 ml.) is given. The quantity needed for the replacement depends on the infant's blood volume. The amount of circulating blood is about one-tenth of the birth weight. In general an exchange transfusion is done with about one and a half times the blood volume. In this way at least 70–80% of the infant's blood is replaced. In nearly all cases of exchange transfusion the percentages of replaced blood were controlled by one of us (J.J.v.L.).

Methods Used

(*a*) The best method for calculating the percentages of replaced blood is that of Ashby, modified by Mollison (1947). To 1 ml. of a red-cell suspension in saline an equal amount of a very powerful anti-Rh (anti-D) agglutinating serum is added. After an incubation period of one hour the tubes are centrifuged for one minute ; the tube is then gently shaken and stood for a few seconds to allow sedimentation of the large clumps to start, and a drop of fluid from the column is examined for the content of non-agglutinating cells. By means of a control of the same red-cell suspension with an equal amount of saline instead of anti-Rh serum the percentages of Rh-positive and Rh-negative cells are calculated. Before this examination the infant's red cells have to be eluted thoroughly, as they are coated with incomplete antibodies, which sometimes prevent strong agglutination. The non-agglutinating cells in both tubes are counted in a counting chamber. In the control tube there are no agglutinating cells ; in the other one there are a number, depending on the presence of Rh-negative cells, as nearly all the Rh-positive cells are clumped by the anti-Rh serum.

(*b*) It is also possible to obtain a rather rough impression of the replacement of blood by determining the titres of iso-agglutinins α and/or β. This is done in the following way.

The titres of α and β agglutinins in the donor's blood are carefully determined. In the blood of newborn infants these iso-agglutinins are usually absent or very weak. By comparing the increasing titres of the above-mentioned iso-agglutinins in the succeeding fractions during and after the exchange transfusion with the titre of iso-agglutinins in the blood of the donor it is possible to find how much of the baby's blood is replaced by that of the donor. If the exchange transfusion has been done correctly and about one and a half volumes of the baby's blood used for the exchange transfusion, the titre of the last fraction of the baby's blood will generally be a little lower than the titre of the donor's blood.

The Rh factor and Coombs's test are controlled during the replacement and are found to become negative.

The percentage of replaced blood (method of Mollison) corresponds well with the mathematical formula given by Wiener, Wexler, and Shulman (1948). When the exchange transfusion has been completed 20,000 units of penicillin are injected and the catheter is withdrawn. The umbilical vein is ligated and the cord sutured with catgut.

Indications for Exchange Transfusion

The following factors are considered to be indications for this therapy.

It is very important to have the previous history of affected children. The death of previous children *in utero* during the last months of pregnancy certainly calls for early induction of labour, but not before the eighth month of pregnancy, because prematurity adversely influences the clinical course. Clinical manifestations, such as anaemia, jaundice, and oedema, are of great help in arriving at a decision. In the same way oedema of the umbilical cord and hydropic placenta are also important. A pale placenta weighing more than one-sixth of the birthweight must be regarded as a significant sign.

Sometimes it is very difficult to know whether an exchange transfusion is necessary. Serological investigations are often of great help (high titre of Rh antibodies of the incomplete form, homozygous genotype of the father). Occasionally there is a definite increase in the titre of Rh antibodies during pregnancy, but there may even be a fall in titre during the end of pregnancy. In general the control of the titre of Rh antibodies does not in itself give sufficient indication for exchange transfusion.

Sometimes the condition of the newborn may show a rather sudden and unfavourable change, so that even when the children seem to be in good condition it is necessary to apply exchange transfusion if the history of previous children is bad and the Rh factor and direct Coombs's test are positive.

Haematological examinations are of great value, especially when the infant shows no clinical symptoms shortly after birth. The findings may include hyperchromic anaemia, mild or strong leucocytosis with immature forms, erythroblastaemia, and hyperbilirubinaemia.

Mollison and Cutbush (1948) report that haemolytic disease was very mild in all infants whose cord-blood haemoglobin was above 15 g. per 100 ml. and cord-bilirubin concentration below 3 mg. per 100 ml., and that a stormy or fatal course would be likely in infants whose cord blood showed anaemia or a bilirubin value of over 4 mg. per 100 ml.

We observed a few cases in which the blood showed little abnormality shortly after birth and the bilirubin content was not increased in the cord blood, but kernicterus developed a few days after birth and the children died. We are inclined to believe that, apart from the haematological investigations, the other facts are of considerable importance.

The cord blood is used directly after birth for the necessary investigations preceding the exchange transfusion (direct Coombs's test, blood-group determination ABO and Rh, blood counts, blood smear, and bilirubin content).

The results of exchange transfusion are very favourable in cases of severe jaundice with anaemia, but it is difficult to decide whether it reduces the frequency of kernicterus.

The clinical symptoms gave the impression that haemolytic disease of the newborn is not merely restricted to the action of Rh antibodies on the red cells, but that liver, placenta, and other tissues also contain Rh antigen. The first investigations to establish the presence of Rh antigens in different tissues were done by Boorman and Dodd (1943). One of us has made a detailed study of this subject (van Bolhuis, 1948). The placenta of Rh-positive infants suffering from haemolytic disease of the newborn caused by Rh incompatibility nearly always had an inhibiting effect on Rh agglutinins. This influence was demonstrated in 27 out of 31 placentas.

Diseased parts of other organs, especially the basal ganglia of the brain in cases of kernicterus and the diseased liver in cases of icterus gravis, also have an inhibiting effect on Rh antibodies. On the other hand, suspensions of apparently normal organs do not absorb Rh agglutinins in any great quantity. It seems reasonable, therefore, to accept the view that kernicterus is due to the direct action of Rh antibodies on the brain, especially the basal ganglia, and that damage to the liver may be the result of Rh antibodies reacting with Rh antigen present in liver tissue.

Not until the diagnosis was firmly established on clinical and serological findings and the indication was clear was exchange transfusion performed.

Cerebral haemorrhage and congenital heart disease are, of course, contraindications to exchange transfusion.

Most cases were caused by D–d antagonism (replacement with cde/cde blood), one by C^W–C (cde/cde blood), one by c–C (replacement with CDe/CDe blood), one by B–O, and two by A–O antagonism.

Results of Exchange Transfusion

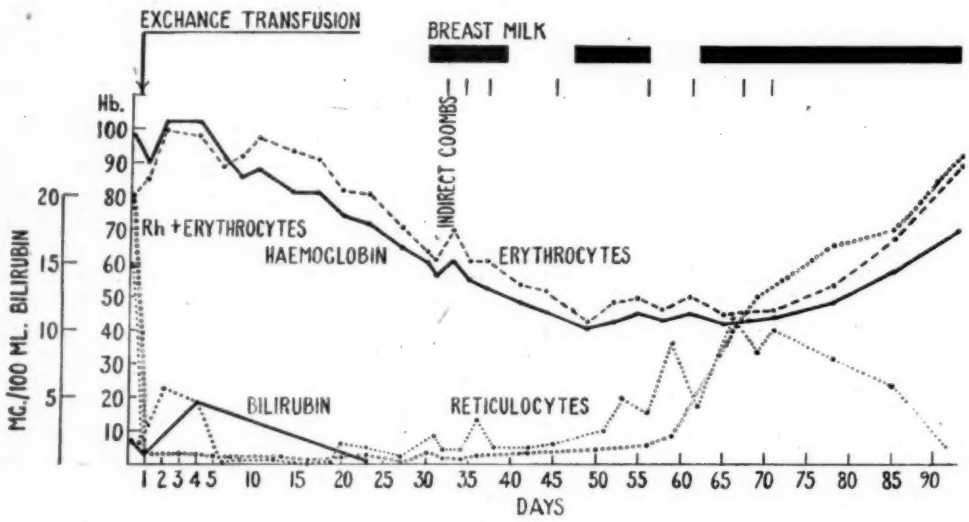
From Jan. 1, 1947, to Jan. 1, 1949, 160 newborn babies were treated with exchange transfusion* ; 36 of them died—

*It is impossible to mention in detail here all the clinical and serological results of this material.

i.e., a mortality rate of 22.5%. The following were the causes of death.

Technical Failures.—Air embolism:—In one case the catheter was not closed during the exchange of syringes and caused aspiration of air. *Blood of the wrong group:*—Four children were treated with Rh-positive blood; two of them died shortly after the transfusion. It may be that Rh-positive blood was the cause of death, although the two other children had a normal clinical course. One case of A–O antagonism was treated with A rr blood: this child also died shortly after the operation. *Infection:*—One child died from sepsis. An abscess was found in the ductus Arantii. There were thrombosis of the portal vessels and multiple lung abscesses.

Possible Influence of Heparin.—In five children death was caused by: adrenal bleeding, 1; cerebral bleeding, 2; lung and cerebral bleeding, and bleeding in other visceral tissues, 1; and bleeding in all visceral tissues plus kernicterus, 1. It is not quite certain that heparin was the cause of death, but it may have had an influence on the haemorrhagic diathesis. Jorpes *et al.* (1939) proved that protamine sulphate synthesized in a special way is a harmless antidote against heparin. It is probable that it will be the medicament of the future to inactivate the action of this anticoagulant.



Treatment too Late.—One child was treated on the fifth day after birth. It already showed symptoms of kernicterus.

Treatment of Too-Premature Children.—Once exchange transfusion was applied to a baby 7½ months old. It is well known that prematurity has a bad influence on the diseased child.

Very Severe Cases of Haemolytic Disease of the Newborn.—Four exchange transfusions were applied to infants with hydrops foetalis, three of whom died. The child which survived was a milder case, with only oedema of the umbilical cord, hands, and feet, though it also had hepatosplenomegaly and a severe haemolytic anaemia (1,200,000 erythrocytes).

In the following cases there was nothing to suggest any relation to technical failures or other faults:

Eight children died with symptoms of kernicterus. One child died with cerebral symptoms (? kernicterus). Four children died from secondary infections about three to four weeks after birth—otitis plus gastritis, 1; bronchopneumonia, 2; scarlet fever or streptococcal sepsis, 1. Seven children died shortly after birth without the cause of death being known. One child died from rupture of spleen (the preceding child also died from spleen rupture, although untreated). In 36 children the treatment was unsuccessful.

In order to arrive at the results of the therapy it seems reasonable to exclude the following cases in determining the mortality rate:

One case of air embolism; one case treated five days after birth, when symptoms of kernicterus were manifest; one case of sepsis; four cases of secondary infection, death occurring three weeks after birth; one case of spleen rupture.

By excluding these cases the mortality rate is reduced from 22.5 to 17.5%.

It is difficult to determine in what way the other above-mentioned factors such as heparin, Rh-positive blood, and symptoms of hydrops foetalis have had a direct influence on the lethal course.

We have received information concerning the subsequent clinical course of 135 patients treated with exchange transfusion. In five cases there were sequelae of brain damage. In a great number of cases a hypochromic anaemia occurred up to three to nine weeks after birth, in one case even combined with a fresh attack of jaundice. In a few cases it was necessary to give supplementary transfusions with Rh-negative blood.

One of us (G.M.H.V.) made a detailed haematological study of his exsanguinated babies. Haemoglobin content and erythrocytes decreased in nearly all infants. In a few of them who could be followed up for a period of three months a severe anaemia with a haemoglobin content of 6.4–8 g.% (40–50%) developed in three to nine weeks. In most cases the red cell count and haemoglobin content increased spontaneously. The following facts were noticed, as shown in the accompanying Chart.

The decline in haemoglobin content and number of erythrocytes correlates with the physiological death of the transfused Rh-negative erythrocytes. After three months these cells have nearly all vanished, and the infant's own Rh-positive erythrocytes have replaced them. It is remarkable that the bone marrow does not deliver Rh-positive cells sooner, for the total number of red cells is decreasing gradually. The nucleated red cells disappear in a couple of days. The bilirubin content increases in general after the exchange transfusion. Although the liver-cell damage and the obstruction of the bile ducts will in most cases add to the jaundice after exchange transfusion, the increase of bilirubin may be caused by the total destruction of the remaining 20% Rh-positive erythrocytes.

In order to determine whether the mortality rate of icterus gravis was reduced significantly by this therapy we compared in the same families the percentage mortality of icterus gravis cases not treated with exchange transfusion with that of the newborn infants who were treated.

In examining the obstetrical histories of 88 families, out of the same group of 160, with 465 pregnancies we found the results given in the following Table. It will be seen that the mortality rate of icterus gravis is 73.7%, and including mild cases 63.5%. After treatment with exchange transfusion it decreased to 22.5%.

Before exchange transfusion came into practice the death rate had already decreased by application of partus arte praematurus, plasma transfusions, and Rh-negative whole blood or packed red cells (Parsons, 1947).

It is impossible for us to compare the mortality rate of icterus gravis treated by simple blood transfusions with

Table showing Comparison between Newborn Infants Treated with Exchange Transfusion and Cases of Icterus Gravis not so Treated

No. of Families	No. of Pregnancies	Normal Children	Mild Cases of E.F. (Haemol. Anaemia and Mild Jaundice)	Icterus Gravis		Stillbirth (5th to 9th Month)	Abortion
				Alive	Died		
88	465	192 (41%)	25 (5·3%)	41	115	57 (12·2%)	38 (8·1%)
				156 (33·5%)			

Mortality rate of icterus gravis, 73·7%.
Mortality rate of icterus gravis, mild cases included, 63·5%.
Mortality rate of 160 cases of icterus gravis treated with exchange transfusion 22·5%.

that of cases treated by exchange transfusion, for we have not sufficient personal experience of the latter.

It is beyond doubt that the prognosis in icterus gravis of the newborn has improved considerably owing to the treatment with exchange transfusion, whether preceded or not by partus arte praematurus.

Summary

After a short introduction the method of exchange transfusion applied to 160 newborn infants suffering from haemolytic disease is described.

The indications for the application of exchange transfusion are discussed.

The mortality rate of 160 babies treated by this method was 22.5%.

In order to determine whether the mortality of icterus gravis was reduced by this therapy, the results of treatment with exchange transfusion were compared with those in icterus gravis of children not so treated. Although we have no data on the results of treatment with simple transfusion of Rh-negative blood, the difference (63.5 to 22.5%) seems to indicate that the prognosis of the newborn suffering from icterus gravis has improved considerably by the application of exchange transfusion.

We wish to express our gratitude to Dr. R. R. Race for all his kind help and much useful advice.

We are greatly indebted to Miss M. v. d. Hart and Miss A. Paulussen for their skilful help in serological investigations and statistical analysis.

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The Minister of Health intends to dispose of all hospital land and premises other than those which are being used or are likely to be needed for the hospital service. Hospital management committees have been asked to consider what property is suitable for disposal. The Minister will agree to the retention of endowed property only where there is a clear need for it—for example, when in the hospital board's opinion it should be reserved for future development. If the development and disposal of hospital property near a hospital is likely to injure the amenities of the hospital, the Ministry's attention should be drawn to the risk, so that it can consider including restrictive covenants in the conveyance of the property. In some cases boards may wish to make a case for the retention of such property.

A CASE OF ANAMNESTIC REACTION WITH Rh AGGLUTININS

BY

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Since the recognition of the importance of Rh agglutinins in relation to pregnancy and haemolytic disease of the newborn the interpretation of the serological findings has become a rather complex problem. The discovery of Rh agglutinins during the antenatal period does not necessarily foreshadow damage to the foetus, as it may represent a "carry-over" from the previous pregnancy. Of much greater significance is the demonstration of a rising titre, which is generally accepted as evidence of specific antigenic stimulation by the Rhesus-incompatible cells from the foetus. The importance of this assumption hardly needs to be emphasized, since on it may depend the decision to induce premature labour.

The following case is recorded because of its rarity and to draw attention to a possible alternative interpretation of the serological findings in pregnancy.

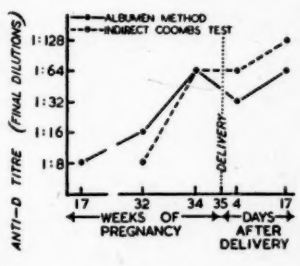
Case Report

The patient, a woman aged 34, had been married twice. By the first marriage she had a normal male child. Eight years later, in December, 1945, she was delivered of a normal male infant (by the second marriage). In December, 1947, she gave birth to a male child which was normal at birth but became jaundiced on the second day and died on the sixth day, deeply jaundiced and exhibiting kernicterus.

At this time the mother was found to be Rh-negative and her husband was thought to be homozygous positive. The infant was found to be R_2r (cDE/cde). The mother's serum contained albumin agglutinins to a serum dilution of 1:16.

In 1948 she became pregnant again and attended the antenatal clinic of this hospital. At the 17th week of pregnancy her serum was found to contain albumin agglutinins (anti-D) to a titre of 1:8. Examination of the patient's cells showed her to be group A_1,N,rr. At the 32nd week the titre was estimated to be 1:16, and two weeks later it had risen to 1:64. Taking into account the past history and the rising titre of antibodies, it was decided to induce labour in the 35th week. A normal female infant was subsequently delivered and has since made good and uneventful progress.

Examination of the cord blood yielded the following information: Group A_1,MN,rr. Direct Coombs's test, negative. Serum contained albumin agglutinins (anti-D) to a titre of 1:32. The serum bilirubin was 1.75 mg. per 100 ml. A blood film showed marked anisocytosis and polychromasia and a number of nucleated red cells (late forms)—approximately 9 per 100 white cells. A haemoglobin estimation performed on capillary blood was 18.9 g. per 100 ml. The picture was consistent with the degree of prematurity.



Examination of the mother's serum four and 17 days after delivery gave titres of 1 : 32 and 1 : 64 respectively—in albumin (see Chart). No saline agglutinins were detected, and the indirect Coombs's test gave fairly comparable results as shown. No anti-M could be detected in the mother's serum. Examination of the father's blood showed him to be group A_1, R_2r.

Discussion

The delivery of a D-negative infant came as a surprise in the face of the alleged genotype of the father, but, this

having been satisfactorily explained, interest was focused on the rising anti-D titre. After repetition of the tests it was concluded that the rise was more than could be accounted for by technical error.

This would therefore appear to be an example of an anamnestic reaction. While others have apparently observed the phenomenon in connexion with Rh agglutinins, only one case has been recorded so far (Davidsohn, 1948). The latter described the case of a woman who had an affected child by a homozygous husband and three years later became pregnant by a D-negative artificial insemination donor. A normal D-negative child was subsequently born, but a marked rise in agglutinins was observed about the sixth month of pregnancy. In the bacteriological field, in which anamnestic reactions have previously been studied, attempts to reproduce the phenomenon experimentally have not given consistent results. However, it has been pointed out (Topley and Wilson, 1936) that where an appreciable rise did occur in response to the introduction of a second antigen, the latter bore some relation to the primary antigen.

Our knowledge of the chemistry of the blood-group antigens has been considerably increased in respect of the ABO system (Morgan, 1947), but is very much more scanty so far as the other antigens are concerned. However, one might reasonably look in this direction for a source of antigenic stimulation in anamnestic reactions, since they apparently occur amongst the ABO substances (Davidsohn, 1948).

In Davidsohn's case there was no ABO incompatibility between the mother and infant, and the MN grouping of the mother was not known. In the present case the only foreign antigen is the M derived from the MN cells of the infant. This is known to be a weak antigen in man, and anti-M has been detected in human serum (Paterson, Race, and Taylor, 1942). Whether M has anything in common with the Rh antigens is a matter for speculation, but the failure to detect anti-M in the mother's serum would seem to rule out any possibility of M being responsible for the rise in anti-D titre in this case.

The problem remains, therefore, in both its clinical and its more academic aspects. From a practical point of view a rising anti-D titre will result in one of three possibilities: (1) an affected D-positive infant, (2) an unaffected D-positive infant, or (3) an unaffected D-negative infant (anamnestic reaction). In coming to a decision the obstetrician will undoubtedly set against induction the second and third possibilities. There are grounds for hoping that in the not too distant future an explanation of why a positive infant may escape can be turned to practical advantage, and in order that the third possibility may be put into its proper perspective it is obviously relevant to know how often an anamnestic reaction may occur.

I am indebted to Dr. A. E. Mourant, of the Lister Institute, for his advice and help in genotyping and MN grouping; to Dr. J. Murray, of Queen Charlotte's Hospital, for kindly supplying details of previous investigations; to Mr. G. F. Gibberd and Dr. F. A. Knott for permission to publish this case; and to various members of the laboratory staff for their assistance.

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CARCINOMA OF THE BREAST IN CASTRATED WOMEN

BY

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Although it well known that carcinoma of the breast may occur after the natural menopause, and although it is also established that women of 60 and 70 may suffer from acute carcinomatous mastitis, carcinoma of the breast occurring after castration, performed either by irradiation or by surgery, is a less familiar condition. At a time when castration is being suggested by many workers as a sound adjuvant in the treatment of cancer it is useful to recall the following facts.

Anatomical and Clinical Data

1. *Frequency.*—In 2,000 cases of carcinoma of the breast I have found 32 (1.6%) occurring in castrated women (statistics from the Centre Anticancéreux, Lyons). This figure is higher than that of carcinoma occurring during pregnancy (21, or 1.05%) or in men (16, or 0.8%).

Summary of Results

Case No.	Castration			Age at Onset of Carcinoma	Age at Death	Remarks
	Reason	Means	Age			
1	Fibroids	*X* rays	28	43	49	
2	,,	Surgery	32	35	36	
3	,,	*X* rays	32	53	54	
4	Miscellaneous	Surgery	36	37	43	
5	Fibroids	,,	37	41	42	
6	Miscellaneous	,,	37	51	56	
7	Fibroids	*X* rays	38	45	57	
8	,,	Surgery	39	46	47	
9	,,	,,	40	63		Alive aged 85. No recurrence
10	Miscellaneous	,,	40	64		Alive aged 67. No recurrence
11	,,	,,	41	58	62	
12	Carcinoma of cervix	,,	42	49	52	
13	Double pyosalpinx	,,	42	50	51	
14	Fibroids	,,	42	55	58	
15	,,	,,	42	62		Alive aged 80. No recurrence
16	,,	,,	43	44		Alive aged 65. No recurrence
17	,,	Radium	43	53	57	
18	Ovarian tumour	Surgery	43	57		Alive aged 62. Recurrence
19	Fibroids	,,	44	64	66	
20	Metropathia	*X* rays	45	47	57	
21	Fibroids	Surgery	45	51		Alive aged 55. Recurrence
22	,,	,,	46	60	63	
23	,,	,,	46	63	73	
24	Miscellaneous	,,	48	66	69	
25	Metropathia	Radium	50	51		Not followed up
26	Miscellaneous	Surgery	52	59	60	
27	Fibroids	,,	55	64	67	
28	Prolapse	,,	60	61	65	
29	Fibroids	,,	63	64		Alive aged 85. No recurrence
30	Miscellaneous	,,	67	85	87	
31	,,	,,	70	75	77	
32	Carinoma of cervix	Radium	71	74	75	

2. *Age of Onset.*—The Table shows the age at castration and the age at onset of carcinoma, the limits of which are 35 to 85 years. There are seven cases between 50 and 55 years and nine between 60 and 65. These are the same as the highest figures for carcinoma of the breast in non-castrated subjects, but with a particular predilection for the 55 to 65 age group.

3. *Interval Between Castration and the Onset of Carcinoma.*—This ranged from two months to 24 years. In nine cases only was it less than five years, and it must be admitted that the cancer might have already been established at the time of castration. In 23 cases the interval was over five years.

4. *Means of Castration.*—These are shown in the Table. In seven cases castration was performed by irradiation (three by radium and four by *x* rays) and was followed by amenorrhoea when done before the menopause.

5. *Indications for Castration.*—In 19 cases castration was performed for fibroids or metropathia haemorrhagica. In 16 of these cases the procedure was carried out before the age of 48. There was one case of bilateral pyosalpinx (age 42), one case of prolapse (age 60—vaginal hysterectomy performed), two cases of carcinoma of the cervix, and one case of recurrent tumour of the ovary that was operated upon when the patient was aged 32 and 43. (This appeared as a solid tumour, the exact nature of which it was impossible to determine.) Eight cases were castrated for miscellaneous reasons.

6. *Influence of Age at Castration on the Interval before the Appearance of Carcinoma.*—It is impossible to correlate the age at castration with the interval before the onset of carcinoma. One can only observe that when castration is performed after the age of 50 the interval is often short (four cases out of eight). In 16 cases in which castration was performed during the menopause, between 40 and 50 years of age, the interval was usually long. In only two cases was it less than five years, and these two patients survived longer than five years.

7. *Types of Carcinoma.*—When first examined the patients presented carcinomas that could be classified as follows: grade 1, 9 cases; grade 2, 11 cases; grades 3 and 4, 9 cases; not precisely classified, 3 cases. Among the nine advanced types five had developed in less than six months. Only one had developed over a period of 10 years, after the age of 45; this patient had undergone castration by *x* rays at 38. No comment need be made concerning the morphological type or histological picture of these carcinomas. Only one was of the endocrine type.

8. *Mode of Development of Carcinomas.*—These carcinomas appeared to be particularly malignant. Of 32 patients one was not followed up, one survived for two years, two survived three years and now show evidence of recurrence, and four survived up to 10 years. Of the 24 patients who died of carcinoma, five survived five years after treatment. These were five women castrated at an early age (28 to 46). One (Case 1) had been operated upon two years after the appearance of the tumour. The condition recurred in the sixth to the ninth year after treatment, in the form of metastases in the lungs or widespread metastases in the vertebrae. On the other hand, seven patients out of 24 died in less than a year. Among these there were two with grade 1 carcinomas; both were castrated at the age of 32 and developed carcinoma at 35 and 53. The other five patients had grade 4 carcinoma which developed in less than six months and permitted only palliative treatment.

9. *Remarks on Case Histories.*—The effect of treatment must be taken into account in deciding the length of time during which the carcinomas developed. Apart from one case which was treated by a combination of surgery and irradiation, all the others (i.e., 23) that were suitable for radical treatment underwent Halsted's operation (with the exception of one patient with grade 1 carcinoma treated by local mastectomy). Four patients survived up to 10 years without recurrences among these 23 cases, giving one of the worst statistical results in surgery.

Some cases seem to merit special mention: (*a*) in two definite cases (carcinoma of the cervix) and in one probable case (recurrent tumour of the ovary) castration was indicated for malignant tumour of the genital tract; (*b*) in 19 cases out of 32 castration was performed for a fibroid or for hyperplasia of the uterus; (*c*) nine post-menopausal cases were retained in the series because many pathologists consider that even in these circumstances castration still has a favourable action. No conclusion can be drawn from my own observations.

In some cases there are circumstances that I consider to be especially unfavourable: one case had previously undergone a biopsy and had been treated with small doses of testosterone; after castration two cases developed goitres, one of which was toxic (these were removed); and in one case the woman's mental condition (neurasthenia) might have been responsible for the rapid development of the growth.

Comment

The study of these 32 cases demonstrates the relative rarity of carcinoma of the breast in castrated women. The figure arrived at (1.6%) agrees with the figure of 1.5% that Herrell (1937) has established. He included benign growths in his series, and showed that in a significant number of patients dying of non-cancerous conditions the frequency of antecedent castration was 15.4%. However, although rare in castrated women, cancer does occur. Interpretation of a limited number of results is always hazardous, and these observations are mainly set down for the purpose of recording the facts. It is, however, obvious that in this series the age of onset of carcinoma is relatively late, and that the number of patients above the age of 60 is significantly high. It is particularly interesting to note that when castration was performed between the age of 40 and 50—at the age when the amount of circulating folliculin is considered significant—carcinoma of the breast appeared in general late (in one case the interval reached 23 years), and in all cases the development of the carcinoma was rather slow, even in cases of early onset.

The large number of cases of highly malignant carcinoma, in young as well as old women, is surprising. It is on this point possible to invoke not only the earlier experimental work of Cori and Murray, referred to by all surgeons and radiotherapists supporting the principle of castration, but also the more precise results obtained by other workers. The liberation of the growth hormone of the pituitary after castration has been demonstrated by Sauerbruch and Knake (1937). The favourable action of the gonadotrophic hormone on the growth of tumours of an ovary, the follicular secretion of which has been neutralized by splenic implantation, has been demonstrated by Penchar and Biskind (1947). One should perhaps attribute to an action of this sort the rapid growth and early onset of mammary tumours after castration and the unfavourable influence of treatment of a goitre in two cases.

At the same time it is well known that the menopause, natural or artificial, does not always suppress the appearance of folliculin in the circulating blood, and endocrinologists have occasionally been able to discover the presence of significant levels. The discovery of hyperplasia or adenomas of the suprarenal by Wooley and Little (1945) in mice after castration at birth, and by Gardner (1942) in older animals, shows that probably it is this gland that ensures the secretion of folliculin after the castration, and in the experience of these authors the frequency of spontaneous carcinoma of the breast is not altered.

The age at which castration is performed is certainly highly important, and the appearance of extragenital folliculin capable of producing carcinoma of the mammary gland is probably not so rapid in castrated women in the stage of hyperfolliculinaemia. I present this simple theory to explain the relative benignancy of carcinoma of the

breast occurring after castration at the menopause. This hypothesis stands to be confirmed or disproved by frequent estimations of the amount of folliculin circulating during the years following castration. Since comment on these anatomical and clinical findings can be made only with the help of experimental data, it is important to measure here the extent of our ignorance in this field. It must be admitted that three factors are undoubtedly present at the time of the appearance and development of mammary carcinoma—the milk factor (Bittner's mammary tumour inciter), the genetic factor, and the hormonal factor. Of these the clinician knows only one. Wooley and Little, for example, have convincingly demonstrated that only certain strains of mice develop suprarenal hyperplasia after castration, and van Gulik, Korteweg, and Muilbock, of Amsterdam, have shown, following the work of Lacassagne (1939), that sensitivity to oestrone varies according to the strain studied.

Conclusions

Until clinicians possess as many data concerning their patients as experimental workers have concerning their mice, castration by surgery or irradiation will never become a therapeutic procedure the efficacy of which can be guaranteed. On the contrary, there are perhaps cases where sterilization will have harmful effects. From the practical point of view these and other observations on castration performed for carcinoma of the breast, either already treated or first seen in an advanced stage, leads to the following conclusions.

(*a*) When carcinoma of the breast begins after castration, or even in spite of castration, the prognosis should be regarded as bad unless castration was performed near the time of the menopause. Castration has therefore, above all, a value in prognosis.

(*b*) Routine castration after treatment of the carcinoma is not a guarantee against later manifestations of the malignant condition. The problem is evidently not the same as in the cases discussed here, since the mammary tumour has been removed or irradiated. The point is to assure prophylaxis against local recurrence or metastases to bones or viscera. The sensitivity of these different sites to the action of hormones is very variable, and there is no proof that all of them are likely to be influenced. We know, for example, that a recent case of surgical castration, done shortly after combined surgical and *x*-ray treatment for carcinoma of the breast in a woman of 34, was followed after three months by the appearance of extensive mediastinal and pulmonary metastases. Recently Rudler reported similar cases at the Académie de Chirurgie. The fact that castration, advocated more than fifty years ago by Shinzinger and Beatson, has never been generally accepted as a favourable measure is proof of its relative ineffectiveness. At present the results reported by Horsley (1947) are often quoted; he combined surgical castration with treatment of the primary lesion and obtained excellent results over a period of five years. I think that the restricted number of these cases and the follow-up period of five years render these results open to criticism, and observation of our own cases castrated at the menopause shows that the value of this procedure can be judged only after an interval of at least ten years.

(*c*) Castration by surgery or irradiation in advanced carcinoma of the breast has given us two good temporary results (of 3 to 13 months) in ten cases in which the castration was performed surgically; of 28 cases in which castration was performed by irradiation 14.39% showed some degree of remission. Cases of highly malignant carcinoma appearing in recently castrated young women make us consider the possibility of failure of castration in similar circumstances.

However, the immediate favourable effects, even on the day of operation, on the pain of vertebral metastases or on the lymphatic infiltration in the mammary region, lead one to envisage a special neuro-hormonal or vasomotor effect of castration rather than a long-lasting endocrine effect.

Surgical castration has, especially for me, an academic interest, since on four occasions out of ten I have found metastases from the mammary tumour in the ovary. In these four instances manifestations of malignancy were severe, and it is possible that the occurrence of metastases in the ovary brought about an exacerbation of the condition. This is a valuable pathological argument in favour of systematic castration after treatment of carcinoma of the breast, but the endocrine problem will not be settled on this single fact. Thus, although there still exist some reasons for castration in carcinoma of the breast, the prognosis of this condition after castration should remain very guarded.

Summary

Thirty-two cases of carcinoma of the breast have been observed after castration by surgery or irradiation. They represent 1.6% of a series of 2,000 cases. Only four of these patients have survived for ten years without recurrence. Many tumours grew rapidly despite castration. The longest interval before the appearance of carcinoma was in women castrated between the ages of 40 and 50. Some comments are made and conclusions reached on the value of castration in cancer of the breast.

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CONGENITAL HEMIATROPHY ASSOCIATED WITH OTHER CONGENITAL DEFECTS

BY

W. L. CALNAN, M.B.

Minimal body asymmetry is very common in human development. Halperin (1931), in discussing normal asymmetry, states that the left side of the body is slightly larger than the right, particularly the cerebral hemisphere, skull, face, leg, and breast. When the inequality is such that it is noticed at or soon after birth it constitutes one of the rarest congenital abnormalities. The case reported here was associated with partial dental aplasis, cutaneous pigmentation, and talipes equinus.

Case Report

A girl aged 3 years 2 months was admitted to hospital in status epilepticus. Subsequent investigation showed that this was due to whooping-cough with bronchopneumonia. The status epilepticus was followed by a left-sided hemiplegia, which cleared up completely after five days. The cerebrospinal fluid was normal. The Wassermann reaction was negative in mother and child.

The patient was a full-term second baby, and pregnancy and labour had been normal. The birth weight was 8 lb. (3.6 kg.). The child was bottle-fed. The father developed shingles about one week after the estimated date of conception. Both parents are alive and well. There is no familial disease or abnormality. At birth the child exhibited a vesicular eruption on the left leg and on the dorsum of both hands. This condition lasted about four months and healed with scarring, particularly on the left leg. The aetiology of this eruption is uncertain and may have been a bullous impetigo. Brown pigmentation of the skin was also present at birth, and it has not altered in character or distribution.

When the child was 3 months old the mother noticed that the left leg was shorter than the right. At 1 year the child walked with a painless limp, and the left leg was considered to

be weaker than the right. At 18 months she was seen by an orthopaedic surgeon, who found ¾-in. (0.95-cm.) shortening of the left leg. Recently the mother has had difficulty in obtaining a pair of shoes to fit both feet.

Examination

The child is thin and has a small face with a receding chin: height, 38 in. (96.5 cm.); weight, 26¾ lb. (12 kg.). She is right-handed. Although moderate in degree, the smallness of the left leg is immediately noticed. No scoliosis is seen clinically.

Head.—The left side seems flatter than the right, with narrowing of the left palpebral fissure. The ears and pupils are equal.

Skin.—There is an increased amount of hair present on the left arm and leg. Scalp hair is equally distributed. Atrophic hairless scars are present on the left arm and leg, corresponding to the site of the vesicular eruption in infancy. Melanotic linear pigmented areas are present over the anterior part of the trunk on the left side, extending for 2 in. (5 cm.) down the front of the thigh. This pigmentation is also present over the lateral wall of the thorax on the right side. It does not show a somatic segmental distribution. There are no cutaneous naevi, no evidence of sclerodermia, and no difference in sweating on the two sides.

Teeth.—Some deciduous and permanent teeth are absent. The distribution of the teeth is shown in Table I: of the deciduous teeth, the lateral incisor and first molar are absent from the right upper and lower jaws, and the upper lateral incisor is absent from the left side. No deciduous teeth are present in the left lower jaw. Of the permanent teeth, the lateral incisor, both pre-molars, and the second and third molars are absent from the right side in both upper and lower jaws, and in addition the canine is absent from the lower jaw. In the left upper jaw only the medial incisor and first molar are present. In the left lower jaw the only permanent unerupted tooth present resembles a canine in its radiological appearance, but it is well developed and calcified and shows some features of a lateral incisor.

TABLE I

Deciduous teeth		Permanent teeth (calcified unerupted)	
e c a | a c d e		6 3 1 | 1 6	
e c a |		6 1 |	2 (?)

Limbs.—The measurements are shown in Table II. The apparent smallness and shortening of the limbs on the left side are more striking than would be expected from the differences in measurements. All movements of the left leg are weaker than those of the right. A talipes equinus is present on the left side. Tilting of the pelvis when standing is seen clinically and radiologically. The difference in size of the long bones has been confirmed radiologically. Bone architecture is normal. The skull is normal radiologically. The bone age agrees with the chronological age, and no difference has been detected between the two sides.

TABLE II.—*Measurements of Limbs*

	Left	Right
Arms:		
Length of whole arm	28·5 cm.	29·0 cm.
Circumference of upper arm	16·5 cm.	16·2 cm.
Circumference of forearm	15·4 cm.	16·0 cm.
Length of third finger	5·8 cm.	6·0 cm.
Legs:		
Length of whole leg	46·0 cm.	47·6 cm.
Length of thigh	25·2 cm.	26·0 cm.
Length of lower leg	20·8 cm.	21·6 cm.
Circumference of thigh	29·0 cm.	30·1 cm.
Circumference of calf	18·7 cm.	19·8 cm.
Length of foot	14·5 cm.	15·0 cm.
Half circumference of trunk at level of umbilicus	26·5 cm.	28·0 cm.

The child's mental development is normal, and no abnormality was found in the central nervous system.

Discussion

In 1927 Kraus and Perkins reviewed the literature on hemiatrophy and collected 18 cases, of which only five were not associated with motor disorders such as hemiplegia and athetosis. They classified hemiatrophy into congenital, familial, and acquired types. The hemiatrophy may be partial or complete. The sex distribution is equal. Hemiatrophy more commonly affects the left side of the body, as opposed to hemihypertrophy, which is commoner on the right side. Later, Landauer (1939) was able to collect 22 cases of partial or complete hemiatrophy, mostly in America.

Mental defect and cutaneous abnormalities are common in cases of hemihypertrophy, but are rarely associated with hemiatrophy.

Only one of the cases of hemiatrophy reported by Kraus and Perkins showed cutaneous abnormality. The case reported by Masten (1936) showed cutaneous pigmentation and defects of the nails of the fingers and toes on the atrophied side. I have been unable to find a previous report of dental aplasia associated with unilateral atrophy. There is no familial history of dental or cutaneous abnormalities in the present case. The distribution of the teeth that are present shows some degree of symmetry.

The occurrence of transient hemiplegia affecting the left side following convulsions suggests an abnormality in the right cerebral hemisphere. Unfortunately it was not possible to carry out encephalography in this case. Ross (1941) found cerebral atrophy in cases of infantile hemiplegia. Penfield and Robertson (1943) examined cases of growth arrest and atrophy, and at operation found lesions (e.g., scarring) in the post-central gyrus of the contralateral cortex. The majority of their cases followed birth injury.

The aetiology of congenital hemiatrophy is still obscure. In the above case the history of shingles in the father shortly after the estimated date of conception of the child may be significant. It is possible that the male germ-plasm was affected by the virus, and this may have caused a defect in the resulting embryo. The asymmetry is probably apparent very early in foetal life. Phisalix (1888) found a 10-mm. human embryo which was asymmetrical. A case of congenital hemihypertrophy reported by Wakefield and Hines (1933) was associated with complete bilateral deafness. No further details are given.

Hemiatrophy is sometimes seen in chondrodysplasia (Ollier's disease), which is essentially a condition affecting one side of the body. Certain features of the case of hemiatrophy reported by Zondek (1945) were suggestive of Ollier's disease. There was no such evidence in my case.

Very few cases of congenital hemiatrophy without motor disorders are reported, but the condition is probably more common than a review of the literature suggests. There is a considerable variation in the degree of asymmetry in the cases, and also in the extent to which this asymmetry develops with growth of the patient. Both sides of the body may grow at the same rate or the difference may increase.

When the case is seen at an early age it is sometimes difficult to decide which is the abnormal side and whether the case is one of hemiatrophy or hemihypertrophy.

The association of dental aplasia predominantly on the left and the left-sided talipes equinus, muscle weakness, cutaneous pigmentation, and transient hemiplegia indicate that the left is the abnormal side in the present case.

Summary

A case of congenital hemiatrophy, associated with partial dental aplasia, cutaneous pigmentation, and talipes, is reported. A possible aetiological factor is mentioned.

I am indebted to Dr. M. E. Edmunds for permission to publish this case and for much helpful criticism and advice.

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Medical Memoranda

A Case of Mepacrine Dermatitis

The following record is of interest because of several features not previously reported.

CASE REPORT

The patient was a private in the R.A.M.C., aged 36, with two years' service. He had previously been a plumber. In November, 1946, he had a generalized rash, most pronounced over the shoulders, loins, buttocks, internal aspects of forearms, and external aspects of legs. The axillae, palms, and soles were free. The rash consisted of deeply pigmented macules with petechiae, mainly in line with the ribs, and a keratotic follicular spiny element giving rise to a "nutmeg-grater" skin, chiefly present on the back. The nails were exfoliating and discoloured, and showed a pronounced heaping up—the so-called Beau line. The hair was thin on the scalp, and the outer third of the eyebrows had disappeared. There were some lichen-planus-like lesions of the mouth. No complaint of itching was made. The eruption had been present for three months.

The rash began on the waist after prickly heat at Singapore in March, 1946. It rapidly spread to the arms, legs, ears, feet, and forehead. The eyebrows and scalp hair began to fall at the same time, and the nails were also affected. The rash, originally red and irritating, soon developed into rough scaly spines, and had reached its present static state a month later. The patient had taken mepacrine for six months and had been in India for eight months before the eruption appeared. He had not noticed any irritation from khaki. The eruption had been diagnosed in Singapore as tropical lichenoid dermatitis.

He had suffered from backache and pains in the loins for the past six months, but had not had any other diseases. His mother has had a scaly rash of uncertain origin on her legs for many years. He complained of malaise and poor eyesight. On examination the B.P. was 120/65 mm. Hg. Nothing abnormal was found in the heart and lungs, abdomen, C.N.S., lymphatics, and upper respiratory tract. Urine: no albumin, sugar, bile; no deposit. Kahn test was negative. B.S.R., 8 mm. in one hour. A blood count showed: Hb, 118%; red cells, 5,500,500; C.I., 1.02; white cells, 6,600 (polymorphs 56%, lymphocytes 37%, monocytes 2%, eosinophils 5%). Platelets numbered 720,000 per c.mm. A radiograph revealed some calcified areas in the right base, but no evidence of active infiltration. The heart shadow was normal. The Hess tourniquet test was negative. Liver function shown by the Quick and Schlesinger tests was normal. A skin biopsy was done and the pathological report stated: "There is an increase in the stratum corneum. The granular layer appears more distinct than normal. There is considerable widening of the papillae, and the pars papillaris contains an excess of free and fixed cells and many melanophores." The mepacrine patch-test was negative. Soon after starting an oral test course of mepacrine the patient's lesions were aggravated. In addition he described a burning irritation of the hands and feet, which had not previously been affected. About this time he suddenly developed mental symptoms of a schizoid type, with confusion and excitement. On stopping the drug the mental condition rapidly returned to normal and the skin to its former state. Mental symptoms have been seen in cases of mepacrine intolerance (Gaskill and Fitz-Hugh, 1945; *British Medical Journal*, 1945; Duncan Shiers, 1946).

A variety of local applications and vitamin therapy appeared to have no specific effect, and this has been the general experience (Sulzberger and Baer, 1945). A year later the lesions were still present but showed considerable improvement, and the pigmentation was less intense.

COMMENT

There seems to be little doubt that in this case mepacrine was the cause of the dermatitis. The association of the skin condition with cerebral symptoms has not previously been described, and the nail dystrophy, which was such a pronounced feature, has not received much attention. Pigmentation (Lutterloh and Shallenberger, 1946) and loss of nails (Wilson, 1946) have been mentioned as occurring, while it is known by fluorescence under Wood's light that mepacrine is excreted in the nails (Kierland *et al.*, 1946). In the present case the Beau line of the nail corresponds in date with the first acute appearance of the eruption three months before. Growth of the nail has been normal since. Especially noteworthy is the long continuance of the eruption since cessation of the drug 18 months ago.

Acknowledgment is due to Dr. J. E. M. Wigley and to Dr. I. Muende for help in the investigation of this case, and to the War Office for permission to publish.

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Rheumatic Pericarditis with Hyperpyrexia

It is stated by Miller in the *British Encyclopaedia of Medical Practice* that "rheumatic hyperpyrexia has now virtually disappeared. When it occurred it was almost always associated with acute pericarditis and was at one time usually fatal. It was always much commoner in adults than in children."

The following report of the case of a young soldier in which the temperature reached 109.2° F. (42.9° C.), with recovery, may therefore be of some interest.

CASE REPORT

A signalman aged 19 was admitted to a military hospital on Dec. 11, 1947, complaining of pains and stiffness affecting the wrists, knees, and ankles. He had had quinsy in childhood, hernia at 13, and appendicitis with peritonitis in July, 1947. There was no history of scarlet fever, rheumatic fever, or growing pains.

He had been quite well until the evening of Dec. 9, when he suddenly felt tired, shivery, and generally "out of sorts," and complained of sore throat and pains in both shoulders and upper arms. Next day these symptoms were still present, with frontal headache and dizziness on moving about. On Dec. 11 he started to get pains and stiffness in the knees, ankles, wrists, and elbows. He noticed that his left knee was swollen. He vomited twice that day. On admission to hospital he felt weak and ill, his throat was still sore, and the joint pains were still severe. He had also constant dull pain in the precordial area. His appetite, normally good, had been poor since the onset of symptoms and he had become constipated. There was no cough or sputum; nor were there any urinary symptoms.

On examination he was flushed and ill, the tongue was moist and coated, and the throat slightly injected. The mucosae were normal. No rash, no palpable nodes, and no cyanosis or clubbing were present. The temperature was 100° F. (37.8° C.), pulse 94, and respirations 20. The heart was not clinically enlarged. The heart sounds were normal at all areas; there were no murmurs. The blood pressure was 130/75.

Respiratory system: no dullness; sounds vesicular all areas; no adventitious sounds. The abdomen was lax, with some tenderness in the left upper quadrant. The liver, spleen, and kidneys were not palpable. The central nervous system showed no disease. There was pain on passive movement of wrists, elbows, knees, and ankles, with redness and swelling of the left knee. The urine showed no abnormality. On *x*-ray examination the heart and lungs appeared normal. White blood cells numbered 7,300 (N. 77%, L. 18%, M. 3%, E. 1%, B. 1%). Acute rheumatism was diagnosed and salicylate therapy started.

Progress.—The joint symptoms responded to salicylates, and after the first few days in hospital the patient was free of joint pains and stiffness. The pyrexia, however, gradually increased. On Dec. 17 a pericardial friction rub was audible over the greater part of the cardiac area. The temperature was 102° F. (38.9° C.). On Dec. 19 the area of cardiac dullness had increased and the rub had disappeared. *X*-ray examination confirmed gross cardiac enlargement with pericardial effusion. By Dec. 20 the pyrexia had become remittent in type, reaching 104–105° F. (40–40.6° C.) each evening. White blood cells numbered 21,000 (N. 89%, L. 9%, M. 2%).

On Dec. 23 blood culture was sterile. Agglutination tests for the enteric group of organisms and *Brucella abortus* and *Brucella melitensis* were negative. Pericardial puncture yielded 20 ml. of evenly blood-stained serous fluid. Films showed lymphocytes and polymorphs in equal numbers, and no organisms. Culture was sterile.

Despite negative findings it was deemed advisable to start penicillin therapy—50,000 units three-hourly. There was no response to chemotherapy. The temperature continued to swing, reaching 106.4° F. (41.3° C.) on Dec. 25 and 109.2° F. on Dec. 26. Immediate cold sponging and the application of ice-bags lowered the temperature to 105° C. (40.6° F.) within fifteen minutes.

On Jan. 2, 1948, the patient was unable to take fluids and became very dehydrated. Chlorides disappeared from the urine.

X-ray examination showed gross pericardial effusion hiding the lung as far up as the second rib anteriorly, with opacity of the lung above, due to collapse. He was given intravenous saline and by Jan. 5 the dehydration had improved and he was again taking fluids orally. Further needling of the pericardium yielded similar blood-stained fluid containing a moderate number of white blood cells, mainly lymphocytes. Both these specimens gave no growth on culture for acid-fast bacilli. From this date the temperature gradually fell from 103–105° F. (39.4–40.6° C.) to normal.

On Jan. 15 *x*-ray examination showed some diminution of the heart shadow and there was a definite improvement in the general condition. Blood examination showed: red cells, 2,560,000; Hb, 8 g. %; M.C.H., 31 γγ; white cells, 5,900 (N. 51%, L. 42%, M. 7%).

Convalescence continued satisfactory over the next four months, apart from a marked degree of anaemia which responded slowly to iron therapy. On May 10 the patient was transferred to a hospital near his home. His general condition was excellent and he had put on a considerable amount of weight. Clinically the heart was not enlarged, the heart sounds were normal, and no murmurs were audible. A radiograph showed the heart shadow to be within normal limits. The B.S.R. was 28 mm./hr. Blood examination showed: red cells, 4,300,000; Hb, 10.7 g. %; M.C.H., 22 γγ; white cells, 9,400 (N. 62%, L. 31%, M. 5%, E. 2%).

I am indebted to Lieutenant-Colonel E. H. P. Lassen, R.A.M.C., for permission to publish this case, and to Major T. B. S. Dick, late R.A.M.C., for assistance and advice.

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Self-castration

The following case seems to be rare enough to justify publication.

CASE REPORT

A man aged 34 was brought to the casualty department by ambulance on July 10, 1947, at 8.50 p.m. He stated that he had removed both his testicles with a razor two hours previously: he was an epileptic, and had been told that castration would effect a cure. He appeared to be healthy and robust, and in complete possession of his senses. He had a severe lacerated wound of the scrotum, which was not bleeding very severely. He was not at all shocked, and was very garrulous. He seemed quite well satisfied with his action, which he had been contemplating for some time. This was evidenced by such statements as, "Well, I have done it now, doctor."

On examination the scrotum had a large lacerated wound on the anterior wall, which had been literally ripped open. Both compartments of the scrotum were filled with blood clot, making it difficult to assess the amount of trauma to the cord and soft tissues. He had his testicles in a small cloth bag, which he stated was his "money bag," and this was rolled up in the front of his vest. He produced these with an air of great satisfaction. The calmness with which his actions were performed was very remarkable.

In order to gain sanction for the necessary operation the patient was solemnly asked if he would sign the following statement: "I ..... state that I cut my testicles out to-night with a razor blade, and I consent to an operation." This was done before operation to provide legal cover in the even of any subsequent action after the patient had realized his deformity.

At operation the lacerated ends and the bleeding-points of the spermatic cord were secured and ligated and the scrotum was closed with a small drainage-tube. He was treated with penicillin and made a good recovery from the effects of the operation. The wound healed within two weeks.

In view of the comment excited by the case, and as he was obviously an undesirable patient to keep in the general ward of a hospital—he made no secret of his act, and was indeed rather proud of himself—he was transferred to the county mental home next day. He was subsequently shown at a clinical meeting, when his attitude had not changed. Up to the time when last seen (July, 1948) he had had two fits, but was under suitable mental treatment.

R. D. N. BISSET, F.R.C.S., D.A.

According to the *Manchester Guardian* a report presented to the Leeds Executive Council showed that during the first nine months of the National Health Service in Leeds the general medical services cost £372,094, prescriptions £224,097, general dental services £280,751, ophthalmic services £173,397, and administration £15,670. The total expenditure of more than one million pounds was equal to £2 a head of the population. The 484,000 people on doctors' lists shared more than two million prescriptions, obtained 35,500 pairs of glasses, had 75,000 sight tests, and paid 48,663 visits to the dentists.

Reviews

EAR, NOSE, AND THROAT

Diseases of the Ear, Nose, and Throat. By D. G. Carruthers, M.B., Ch.M., F.R.A.C.S. Second edition. (Pp. 344; 140 illustrations. 25s.) Bristol: John Wright and Sons. 1948.

L'Exploration Clinique en Oto-Rhino-Laryngologie. By Georges Portmann. (Pp. 934; 541 illustrations. 2,500 francs.) Paris: Masson et Cie. 1948.

Mr. D. G. Carruthers's small book, hailing from Sydney, is written for students who want to learn the elements of the subject. No controversial theories are discussed, nor are major operations described : the subject matter is simple and practical. The first chapter describes the examination of the nose, throat, and ear, with helpful illustrations, and gives several "tips" for the comfort of the patient and the success of the observer. The coloured plate depicting various appearances of the tympanic membrane is good, though one of them might with advantage have shown a marginal perforation. Hearing tests are briefly dismissed; after advocating the spoken word as the most practical test and mentioning gramophone audiometry, it seems a pity the author added the forced whisper and the watch test. The explanation and illustration of the labyrinth tests are good.

There follow sections devoted to the diseases of the individual parts of the upper respiratory tract, beginning with the throat. The operations for removal of tonsils and adenoids are fully described and illustrated. In the discussion on retropharyngeal abscess and its treatment mention of such a rare complication as erosion of the internal carotid seems out of place. Again, in describing syphilis of the pharynx the author states, "A primary lesion takes the form of a shallow and slightly indurated ulcer." In this country a primary syphilitic lesion of the pharynx is extremely rare and does not take the form of an ulcer. Exception may also be taken to lack of emphasis that tuberculous ulceration of the pharynx is only seen as a complication of advanced phthisis.

The section on the nose and sinusitis wisely recommends a conservative line in treatment, that every effort should be directed to restoring the nasal lining to normal. For chronic sinusitis standard operations are advocated, but an external fronto-ethmoidal operation surely may be classed as a major procedure. In several instances antibiotic chemotherapy is advised, but is given second place to surgery. Again, it is unfortunate the author states that a common cause of headache of nasal origin is reflex irritation from sharp septal spurs and ridges, a view long abandoned in this country.

The next part deals with the ear, and is perhaps the best in the book. The pages on meatitis are excellent; obviously the author has had very wide experience of every variety. His advice on chemotherapy in acute otitis media is exactly what is needed by the student. In the description of acute mastoiditis the indications for operation are good, but should include deafness and facial paralysis. Lastly comes the section on the larynx. Acute and chronic laryngitis are described, but one complication of the former—ulceration and perichondritis—is surely too rare for inclusion. The discussion on paralysis of the cords is the weakest part of the work. There is no description of the muscles that move the cords, and one sentence must leave the student in doubt whether only the left recurrent nerve passes round the aorta. Further, a page of pictures of the larynx to show the various positions of the cords in different kinds of paralysis is upside down. There follows a good description of the operation of tracheotomy. Other chapters discuss foreign bodies in the air and food passages, diseases of the oesophagus (with good *x*-ray pictures), internal-ear deafness, and the use of hearing-aids.

In *L'Exploration Clinique en Oto-Rhino-Laryngologie* Docteur Georges Portmann asserts that the clinical approach to the patient is vital, and unless the doctor has this clinical knowledge all his scientific learning is useless. He emphasizes throughout the importance of symptoms and signs, and this monumental work fully justifies his claim to carry out his task; the student who had never seen a patient could, if he read and followed the instructions exactly, examine the ear, nose, and throat adequately. The method of taking the history is fully explained. Normal appearances and methods of examination are clearly described, and in some cases every step is illustrated not only by diagrams but with excellent photographs; as an example, the passage of the Eustachian catheter is given eight pictures.

There are six sections : ear; nose; mouth and pharynx; larynx, trachea, and bronchi; oesophagus; laboratory examinations.

The description of the examination of the ear is detailed, profusely illustrated, and includes the anatomy and physiology. To explain the internal ear there are several reproductions of microscopical sections. Functional examination of hearing is fully discussed, and the analysis of the reactions of the labyrinth occupies many pages, every stage being shown in photographs. Radiography of the mastoid is demonstrated in various positions. The same meticulous care and detail is devoted to the examination of the nose and naso-pharynx. The author uses a special naso-pharyngoscope and a sinuso-pharyngoscope with which the cavity of the antrum can be studied.

The section on the mouth and pharynx includes a description of sialography and explains how radiographs of the pharynx and the teeth should be taken. Chapters on the larynx, trachea, and bronchi open with a detailed account of the anatomy (as in all other sections), after which the voice and the use of the stroboscope are considered. There follow a great number of illustrations of various methods of direct examination, including the suspension laryngoscopy of Killian, which is now rarely used in this country. The gastroscope also has a place in this part of the book.

The work ends with a full description of laboratory methods, which is not considered necessary in English books on the specialty. The compilation of this tome, the work of one man, must be regarded as a fine achievement.

W. M. MOLLISON.

PSYCHOBIOLOGY

Psychobiology and Psychiatry. By Wendell Muncie, M.D. Second edition. (Pp. 620; 70 illustrations. £2 5s.) London: Henry Kimpton. 1948.

Psychobiology is a school of psychiatry initiated by Dr. Adolf Meyer. Under Meyer's leadership the Henry Phipps Clinic at the Johns Hopkins Hospital became a teaching centre of international repute. Many teachers in key positions in this country studied there under Meyer, whose doctrines have therefore exercised an important influence on British psychiatry.

Psychobiology has three significant aspects : a philosophy, a mode of approach to the patient, and a framework for clinical description. From the philosophical point of view it is monistic, demanding that the individual should be treated as a unity and not in the separate categories of body and mind; and it maintains that the laws of behaviour are distinct from, and of a higher order than, those of physical medicine, as the laws of chemistry are not directly to be derived from the concepts of physics but have a validity of their own. The psychobiological approach to the individual patient is mainly directed to an effort to understand his behaviour as the resultant of past experiences and present circumstances. Mental disorders are conceived as reactions; the approach is biographical, the concepts employed are dynamic. Allowance is made for organic and constitutional factors; but every attempt is made to account for as large a part as possible of the total picture in terms of what is individually rather than generally significant. So it is that such concepts as that of the "endogenous" psychoses come to have little meaning, and even the specific features of organic states tend to become submerged under the emphasis given to the total reaction of the individual.

Standing midway between the classical psychiatry which stems from Kraepelin and the pan-psychic theories developed by the psycho-analysts, psychobiology has been assailed from both sides. From the point of view of the former, its principal weakness is that it leaves little room for the specific

states derived from organic process and hereditary predisposition. The strength it gains in therapy is lost in the fields of diagnosis and prognosis. As the individual patient always remains an individual, features shown in common by groups of patients receive scant attention. It has accordingly proved remarkably sterile in stimulating research, and in this respect cannot be compared with either neo-Kraepelinian psychiatry or psycho-analysis. From the psycho-analytic side it is criticized for the insufficient emphasis it places on the unconscious and for its neglect of free association as a technique of investigation and treatment. In the United States its position has become weaker, and it seems that it will disappear under the rising tide of adherence to the Freudian school. Nevertheless, it has important advantages over both the opposed trends. It has corrected the too static concepts of the older psychiatry, and has especially fructified the study of the neuroses. In this field some of its concepts are indispensable, and it is probably the best available discipline for the student of psychotherapy. Compared with psycho-analysis, it has the great advantages of retaining the medical viewpoint and of being balanced, scientific, and undogmatic. Every student of psychiatry, no matter to what school he is drawn, should read Dr. Muncie's exposition.

ELIOT SLATER.

FEMALE SEX HORMONES

Die weiblichen Sexualhormone in der Pharmakotherapie. By O. Mühlbock, H. Knaus, and E. Tscherne. (Pp. 300; illustrated. 24.80 Swiss francs.) Bern: Medizinischer Verlag Hans Huber.

This book on therapy by female sex hormones is one of a series intended to discuss the treatment of individual diseases and the uses of various therapeutic substances. It opens with a section on the biochemistry, physiology, and pharmacology of oestrogens and progesterone. The chemical structure, preparation, site of formation, and metabolism of the steroids are dealt with in turn, and methods of chemical and biological assay are mentioned. A brief description is then given of the action of the hormones on the reproductive tract and other organs in the body. This general introduction adequately fulfils the authors' intention of providing a summary of reasonably accepted knowledge for practising doctors.

The second part of the work is concerned with the use of female sex hormones in clinical practice. It is illustrated by clear diagrams and describes the hormonal treatment of menstrual abnormalities, pregnancy, and sterility. The methods proposed do not conflict with current practice in this country. The final section treats of the use of oestrogens in endocrine disorders, in circulatory disturbances, and in dermatology, urology, psychiatry, and other branches of medicine. Much of this matter consists of summaries of uncontrolled observations reported by clinicians who on purely empirical grounds have found oestrogens beneficial. This section may provide ideas for treating refractory cases, but it is not based upon sufficient scientific knowledge. It is remarkable that the strikingly successful use of oestrogen in the palliative treatment of cancer of the prostate is not mentioned at all.

P. L. KROHN.

The third edition of *Handbook of Orthopaedic Surgery*, by A. R. Shands and R. B. Raney (pp. 574; 159 illustrations; $6.00 or £1 12s. 6d. St. Louis: The C. V. Mosby Company; London: Henry Kimpton), has apparently been found of great value as an adjunct to undergraduate orthopaedic study in the United States, where many of the leading medical schools dispose of the subject in twenty-four lectures of an hour's duration. Accordingly, this work is divided into twenty-four chapters, which provide a sound and comprehensive outline of orthopaedics. The book is excellently produced and beautifully illustrated, with the exception of the radiographs, which are generally not reproduced photographically but represented by artists' drawings. Although this has been done to eliminate unnecessary detail it introduces a confusing element of unreality. The work is naturally deficient on those aspects of orthopaedics which in any case cannot be learnt from books—namely, after-treatment and splintage. One of the best features is a really excellent bibliography, providing a valuable "source book" of orthopaedics, a feature which will appeal greatly to the postgraduate student.

BOOKS RECEIVED

[Review is not precluded by notice here of books recently received]

The Mental and Physical Effects of Pain. By V. C. Medvei, M.D., M.R.C.P. (Pp. 59. 3s.) Edinburgh: E. and S. Livingstone. 1949.

Some Notes on Galen's Anatomy. By W. L. H. Duckworth, M.A., M.D., Sc.D. (Pp. 42. 2s. 6d.) Cambridge: W. Heffer. 1949.

Minutes of the Dental Board of the United Kingdom, 1948. Vol. 27. (Pp. 101. No price.) London: Constable. 1949.

Haemoglobin. Edited by F. J. W. Roughton and J. C. Kendrew. (Pp. 317. 40s.) London: Butterworth. 1949.

Modern Practice in Psychological Medicine, 1949. Edited by J. R. Rees, M.D. (Pp. 475. 50s.) London: Butterworth. 1949.

Lehrbuch der Geburtshilfe. Part II: Pathologie. By H. Martius and others. (Pp. 1,196. M. 72.) Stuttgart: Georg Thieme. 1948.

Death Be Not Proud. By J. Gunther. (Pp. 212. 7s. 6d.) London: Hamish Hamilton. 1949.

A Dictionary of Scientific Terms. By I. F. Henderson, M.A., and W. D. Henderson, B.Sc., F.R.S.Ed. 4th ed. by J. H. Kenneth, M.D., F.R.S.Ed. (Pp. 480. 32s.) London and Edinburgh: Oliver and Boyd. 1949.

Principles of Psychiatric Nursing. By M. E. Ingram. 3rd ed. (Pp. 525. 19s.) Philadelphia and London: W. B. Saunders Company. 1949.

Modern Contraception. By P. M. Bloom, M.B., Ch.B. (Pp. 46. 2s.) London: Delisle Limited. 1949.

Essentials of Orthopaedics. By P. Wiles, M.S., F.R.C.S., F.A.C.S. (Pp. 486. 42s.) London: J. and A. Churchill. 1949.

College Zoology. By G. W. Hunter, Ph.D., and F. R. Hunter, Ph.D. (Pp. 821. 27s. 6d.) London: W. B. Saunders. 1949.

Blood Transfusion. Edited by G. Keynes, M.A., M.D., F.R.C.S. (Pp. 574. 52s. 6d.) London: Simpkin Marshall. 1949.

Textbook of Obstetrics and Obstetric Nursing. By M. M. Bookmiller and G. L. Bowen, A.B., M.D. (Pp. 737. 22s. 6d.) London: W. B. Saunders. 1949.

Post-traumatic Epilepsy. By A. Earl Walker, M.D. (Pp. 86. 15s.) Oxford: Blackwell Scientific Publications. 1949.

Clinical Orthoptics. By M. E. Kramer. (Pp. 475. 40s.) London: Henry Kimpton. 1949.

Fractures and Dislocations. By E. O. Geckeler, M.D. 4th ed. (Pp. 370. 27s. 6d.) London: Baillière, Tindall and Cox. 1948.

The Nursery Age. By H. M. Cousens, S.R.N., R.S.C.N., S.C.M. (Pp. 180. 10s. 6d.) London: Faber and Faber. 1949.

Plaster of Paris Technic. By E. O. Geckeler, M.D. 2nd ed. (Pp. 220. 16s. 6d.) London: Baillière, Tindall and Cox. 1948.

Forensic Medicine. By Sir S. Smith, C.B.E., M.D., F.R.C.P., D.P.H., and F. Smith Fiddes, O.B.E., M.D. 9th ed. (Pp. 659. 30s.) London: J. and A. Churchill. 1949.

Clinical Aspects and Treatment of Surgical Infections. By F. L. Meleney, M.D., F.A.C.S. (Pp. 840. 60s.) London: W. B. Saunders. 1949.

Clinical Roentgenology of the Digestive Tract. By M. Feldman, M.D. 3rd ed. (Pp. 901. 44s.) London: Baillière, Tindall and Cox. 1948.

Mayo Clinic Diet Manual. By the Committee on Dietetics of the Mayo Clinic. (Pp. 329. 20s.) London: W. B. Saunders. 1949.

Semiologia Radiológica de la Columna Vertebral. By L. R. Badia. (Pp. 101. No price.) Barcelona: Byp. 1949.

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THE ANNUAL MEETING

Last year the Annual Meeting was held at a time when the medical profession was full of anxiety about the introduction of the National Health Service. It was fitting, therefore, that the B.M.A. then met in an ancient university town, where it could be reminded that the advancement of learning was something but little affected by the shifting political scene. In spite of difficulties those responsible for arranging the Cambridge meeting set a very high standard for those who were to succeed them as hosts year by year. The Harrogate Division, under the new President of the B.M.A., Dr. C. W. Curtis Bain, rose to the occasion with conspicuous success, and the meeting last week had much of the flavour and atmosphere of annual meetings held before the war. Harrogate turned out to be an ideal place for a conference of this kind. Not only was the setting full of charm and good weather, but the buildings in which business was conducted and the visitors were lodged were so conveniently grouped in the centre of the town that it was easy to pass from one to another without fatigue and on foot. The fact that the meeting ran so smoothly is indeed a tribute to the remarkably efficient organization behind it. Dr. and Mrs. Bain were the most delightful and unassuming of hosts. Upon the honorary local general secretary falls much of the burden of organization, and in Dr. D. D. Payne, Medical Officer of Health for Harrogate, the Division had found the right man for the job. He was ably helped by Dr. T. A. Best, Mr. T. V. Pearce, Dr. T. G. Reah, and Dr. L. J. Prosser in providing for the comfort and entertainment of the guests not only from this country but also from overseas. The civic authorities under the Mayor, Councillor Mrs. M. Fisher, J.P., worked obviously in the closest co-operation with the local medical profession to make the week in Harrogate memorable and enjoyable.

If Harrogate was a social success, it was no less a success intellectually. One of the principal reasons for holding the meeting is to provide through the scientific sections an opportunity for the visitors to hear from authorities what they know and think about current medical progress. For the first time four days instead of three were given to the scientific sections, an innovation introduced by the honorary local science secretary, Dr. J. V. Wilson, to whom the B.M.A. is much indebted for the first-class and varied intellectual fare last week. The Sections were very well attended, and in most of them there was time and scope for discussion.

Before the main body of visitors arrived the Annual Representative Meeting, at which there was a record attendance, had spent three and a half days in debate on the various matters now preoccupying the mind of the profession generally. In fact the agenda was so heavy that, in spite of the efficient conduct of the business by Dr. E. A. Gregg, the Chairman, there was not enough time left on the last morning to deal adequately with many important committee reports. Two subjects stood out in the meeting, on one of which there was complete agreement and on the other of which there was disagreement. On arbitration the Representative Body enthusiastically followed the lead given to it by Dr. H. Guy Dain, and comment on this appears in another leading article. On the organization of the B.M.A. the R.B. once more found itself with a divided mind ; the proposals before it were the result of the most thorough examination by the Organization Committee and the Council. The debate on this, which was fully reported in last week's *Supplement*, at least shows that representatives take a lively interest in the question how the B.M.A. should adapt its structure to changing conditions. Apart from the question of how, for example, members should be elected, the desire seems to be for a larger representation on the Council of the B.M.A. This is understandable and supported by argument. It may nevertheless be asked whether an increase of size makes for an increase of efficiency. The whole question of organization has once more been referred back, and it is probable that a special representative meeting will have to be called to look into this highly important problem. The meeting, preoccupied as it was with the present and the future, did not forget the past, and earnestly considered how best it might commemorate those medical men and women who lost their lives in the war. It decided finally to adopt the Council's suggestion that there should be a visible and permanent memorial in the shape of a fountain in the courtyard of B.M.A. House, Tavistock Square.

No meeting of professional men is complete without the ceremonial and ritual which give it cohesion, strength, and dignity. In spite of the heat of the day a large procession wended its way to the church on Tuesday, where it had the privilege of hearing a sermon by the Archbishop of York. The Adjourned Annual General meeting was once more, and this time with greater significance, made colourful by the introduction one by one

of delegates from overseas. On this occasion the Gold Medal of the Association awarded to the late Dr. John W. Bone, who for many years held office, including that of Treasurer, in the B.M.A., was presented to his son, Mr. Alan W. Bone. The popular lecture at the conclusion of the meeting was attended by a full gathering of the people of Harrogate to hear Dr. Charles Hill's well-known voice on the subject of "Health and Happiness."

At each annual meeting the Association, in electing its President for the coming year, also chooses the man as President-Elect who is to be the next to preside over the B.M.A., the choice this year being Professor T. P. McMurray, the well-known orthopaedic surgeon in Liverpool. If Liverpool succeeds in emulating the example set by Harrogate then we may be sure that the large numbers who attended this year's meeting will be present next year in a county whose rivalry with Yorkshire has been told so often in the history books.

ARBITRATION

During the second reading debate on the National Health Service Bill in May, 1946, Mr. Greenwood, replying for the Government, pointed out that the Minister was given power to prescribe by regulations the conditions of service and remuneration of those employed in the National Health Service. He went on to say that Mr. Bevan's intention was to use "the familiar machinery of discussion and negotiation with employees" before prescribing terms of service or rates of remuneration. Where suitable machinery existed it would be used with such adaptations as might be necessary. "What my right hon. friend [Mr. Aneurin Bevan] has in mind where there is no machinery is to set up some machinery of the Whitley Council type, behind which there may be provision for agreed reference to arbitration." In view of what has happened since, we should draw attention to the words "may" and "agreed." In May, 1948, the Minister agreed that after the inception of the Service it would be open to the profession to raise through Whitley machinery the question of betterment. It was because of this that the chairman of Council, Dr. H. Guy Dain, was able to persuade the medical profession to enter the National Health Service. A document setting forth the Government's proposals for Whitley machinery was sent to the B.M.A. in October, 1947.[1] In this the following statements appeared: "It will suffice here to say that, while the Government hopes that the normal working of Whitleyism will minimize the necessity for arbitration, it is anxious to accord the fullest rights to arbitration subject to the preservation of the Government's prerogatives. *A code of conduct is unlikely to be arbitrable, but a simple proposal for a change in wage or salary rates almost certainly is.*" (Our italics.) But when representatives of the General Medical Services Committee went to the Ministry of Health in April of this year and asked whether the question of remuneration for general practitioners could be raised through Whitley machinery and, in the event of disagreement, if recourse could be had to arbitration, it received this reply: "It must not be assumed without further discussion that participation in the Whitley machinery necessarily involves, in the event of disagreement, the right to resort compulsorily to arbitration on all subjects."[2]

The Minister is under a moral obligation to provide machinery for arbitration in the event of disagreement on the remuneration of those medical men and women working in the National Health Service. What betterment factor should be applied to the remuneration of general practitioners and consultants and specialists so as to carry out the recommendations of the Spens Reports is now being discussed. In the event of disagreement it is imperative that the right to arbitration should be granted and Ministerial promises thus be met. As Sir Lionel Whitby pointed out in a recent letter to *The Times*,[3] under Clause 12 of the Amending Bill, the Minister of Labour has the power to refer disputes to arbitration and is unlikely to do this if the Minister of Health does not want it to be done. Sir Lionel asks why the Government have gone back on their pledge and are proposing to treat professional workers less fairly than the rest. He points out that the implications of the Government's attitude are far reaching, as more and more professional workers are becoming employed by the State indirectly or directly. This is not a question affecting only medical men and women, and it is because of these wider implications that the medical profession must press for a satisfactory settlement of a matter which weekly becomes more confused by this or that interpretation of this or that mechanism. As the Secretary of the Association pointed out at Harrogate, the profession had been promised that the voluntary arrangements under the Whitley machinery should be buttressed by an arbitration system. A constitutional issue was raised by the fact that remuneration would in due course be the subject of regulations. Now that so much of industry is nationalized and the medical profession also, the Government has lost its function as a balancing mechanism between two sides in a dispute, as it now becomes a party in disputes in nationalized industries and professions. If this country is to preserve its reputation for justice and fair play it is essential that in disagreements between the Government as employer and, for example, the medical profession as employee there should be as a matter of principle a method of referring such disputes

[1] *British Medical Journal Supplement*, April 23, 1949, 237.
[2] Ibid., April 23, 1949, 237.
[3] *The Times*, June 20, 1949.
[4] *British Medical Journal*, 1949, 1, 762.
[5] Ibid., 1949, 1, 948.

to arbitration in a way that will allow the medical profession to do its work free from a feeling of grievance. Arbitration has already been the subject of two recent articles in this *Journal*,[4 5] and we make no apology for returning to this theme once more.

The Joint Committee representing consultants and specialists decided on Tuesday afternoon to advise consultants and specialists not to sign permanent contracts. In a letter sent to the Secretary of the Ministry of Health (and published in the *Supplement*) Sir Lionel Whitby, as chairman of the Joint Committee, asks that there should be established for consultants and specialists a permanent negotiating machinery, and that disputes (including those on remuneration) should be referable to arbitration, both parties to be bound by the decision of the arbitrator. As Dr. Dain said at Harrogate : "We must have the right to go to arbitration even though it is the Government which is the employer. It is essential to us if we are to continue in the Service that freedom to go to arbitration should never be in question."

PAST AND PRESENT

Dr. H. Guy Dain this year did not seek re-election as chairman of Council, and thus brings to an end a memorable period of office. Dr. Dain was elected chairman in 1943 and during the past six years has been in the forefront of the controversy that has raged over the National Health Service. At no time in the history of the B.M.A. has a chairman of Council had to bear such a heavy load of responsibility. At no time have the decisions and actions of the chairman been of such consequence to the medical profession. Amid conflicting counsels and changes of mood in the profession Dr. Dain has with courage and tenacity kept clearly in front of him —and in front of the doctors of this country—the principal policies of the British Medical Association. With this he has combined a remarkable grasp of detail and a capacity to expound before medical meetings both the particular and the general in forthright and orderly English. This he has done with an energy and endurance that might be expected of a man one or two decades younger than himself. It is indeed difficult to recall that he was in 1917 a member of the Insurance Acts Committee, of which he became chairman ; his services for the medical profession under the N.H.I. Acts were recognized in 1936 when he received the Gold Medal of the B.M.A. It is good to know that he has agreed to continue taking an active part in Association affairs by serving on its Council and on many committees.

It can be no easy task to follow Dr. Dain, but, like him, the new chairman of Council, Dr. E. A. Gregg, has been chairman of the Insurance Acts Committee and of the Representative Body. He therefore brings to his new and distinguished office a long and well-tried experience in medical politics and a capacity, too, to give unstintingly of his time and energy to the affairs of the Association. There are in the coming year also changes in the membership of the Council, and fourteen doctors will for the first time take part in its deliberations. There is provision in the Association's constitution for the past President to be a member of Council, and in this capacity the Association will continue during the next year to have the advantage of Sir Lionel Whitby's interest in and grasp of the business of a body which can through its membership speak for the profession as a whole.

WILLIAM OSLER

We celebrate this week the centenary of the birth of a great physician—"a physician of two continents"—for William Osler's name is honoured as much in Canada and the United States of America as in Great Britain. In paying tribute to Osler's memory we have been helped by six men who knew him well and whose memories of their friend bring him vividly before the reader thirty years after his death.

Sir Charles Sherrington, who as Professor of Physiology at Oxford worked closely with the Regius Professor of Medicine, tells of Osler's influence there as a scholar, humanist, and physician. In modern times Oxford has received many professors from other universities, but there can have been no worthier adopted son or one who so speedily became imbued with its spirit and tradition. Professor Charles Singer speaks of Osler's love of old books and manuscripts : "He was a true book-lover, to whom the very sight and touch of an ancient document brought a deep and subtle pleasure." Professor Singer also discerned in him, despite his gaiety, a profound and essential melancholy, as of one who had passed through some unknown tragedy to a life of human service. This trait was accentuated in Osler's last years by the loss of his only son.

Osler's cousin, Dr. W. W. Francis, who worked under him at Johns Hopkins University and completed the *Bibliotheca Osleriana* in a spirit of scholarly devotion, contributes an interesting account of the Osler family, rich in new biographical detail. Lord Horder, who attended Osler in his last illness, emphasizes his encouragement of, and interest in, a younger colleague. Professor K. J. Franklin pays tribute to Lady Osler. As he says, "It is impossible to overrate what she did to stimulate 'the great physician,' to help him to make right decisions, to provide him with necessary recreation at home, to entertain their numerous friends while leaving him free for his work, and in countless other ways to be his ideal partner for twenty-seven eventful years." Lady Osler was a great and good woman, and no tribute to her husband's memory would be complete without reference to the important part she fulfilled as wife and helpmate. Lastly, Sir Arthur MacNalty contributes a biographical study of Osler based on personal knowledge of the great physician during his years at Oxford.

The life of Osler falls into three distinct periods: the Canadian period, during which he did his scientific researches as zoologist, physiologist, and pathologist and taught the new learning in medicine at McGill University; the American period, in which at Philadelphia he enhanced his reputation as teacher and physician and afterwards as Professor of Medicine at Johns Hopkins University built up a famous medical school from the beginning; and the Oxford period, in which he not only served the Oxford Medical School but advanced British medicine and became one of its recognized leaders. Here too he found opportunity for gratifying his love of letters and for welding closer links between Britons and Americans, links which have been of paramount importance in two world wars. In the 1914–18 war Osler himself rendered conspicuous service as a consultant and adviser to the War Office.

Osler was an outstanding figure in medicine in his day and generation. He was the author of an original and widely read textbook of medicine, based on personal experience. He first described the blood platelets in the circulating blood; he made a number of observations on some rare diseases, two of which bear his name; he wrote monographs on medicine, lectures, and historical studies of men and books; and he was an able teacher and medical administrator. But these facts are insufficient to explain the great influence that he exercised on his contemporaries and on medical progress, or to render it apparent to a younger generation. The answer to this question will be found in the contributions from his friends and students assembled in this issue of the *Journal*. Throughout each and all of these tributes, like a golden thread in a variegated tapestry, runs, in addition to profound admiration for Osler's intellectual gifts, a reference to his humanity and the magnetic charm of his personality. Everybody who met Osler at once became his friend—high and low, rich and poor. The child, the student, the colleague, the old men at Ewelme, all realized that in Osler they had found a sympathetic confidant. This gift of approach to men and women was aided by his marvellous memory for faces. It was said of Osler that he never made an enemy. He never spoke unkindly of anyone, and, realizing the imperfections of mankind, sought out the best in everyone. Like St. Martin, one snowy night in Baltimore he gave his cloak to a beggar, who in return bequeathed to "my good friend William Osler" his liver, hobnailed by drink.

In some respects Osler was a saint of medicine, yet, as his practical jokes showed, a very human saint. He spent himself freely for others, for the honour and dignity of his profession, and for the common weal. He declared that happiness lies in absorption in some vocation that satisfies the soul; that we are here to add what we can to, not to get what we can from, life, and he lived up to that belief.

EARLY WEANING

Is breast-feeding on the decline? General impressions are that it is; on the other hand, history records that from the time that infant feeding became the subject of special study in this country there have always been many mothers unable or unwilling to suckle their babies. Fashion, fancy, poverty, ignorance, and social trends have all in their day had the blame attributed to them. So has the mother-in-law, despite the fact that breast-feeding has no more effective propagandist than the mother-in-law who has herself nourished all her family on the breast. The influence of these various factors changes with the times, and without more reliable evidence it would be unwise unreservedly to accept that the mothers of to-day are less inclined to breast-feed than those of previous generations. If there is reason to doubt an absolute decline in the incidence of breast-feeding there is more justification for believing that a tendency exists for breast-feeding to be terminated earlier than hitherto. Spence[1] drew attention to this before the last war, and evidence in support of his views was later put forward by Robinson[2] and Hughes.[3] In last week's *Journal* (p. 14) Dr. F. H. M. Dummer described a recent investigation in Hertfordshire. He found that only 13.2% of babies were still wholly breast-fed at the age of six months, and he pointed out that the "mode" in breast-feeding is set by the primiparae. Physical incapacity on the part of the mother or infant is a relatively rare cause of failure to continue breast-feeding. Failure is not infrequently ascribed to "physiological insufficiency." Dummer rightly criticizes the use of the term, for it includes many ill-defined causes concerning which little is known, no matter how suspect they may be.

In a Ministry of Health report[4] the opinion was expressed that a rigid feeding routine in institutions may have an adverse effect on breast-feeding. This view finds its extreme form in the self-regulating feeding programme recommended by Aldrich and Hewitt.[5] Obviously there is a need for compromise between a routine rigidly imposed and self-regulation freely allowed. Allowance must be made for the emotional disturbances which are experienced by the recently delivered mother and which tend to be aggravated when she returns home from hospital—a crucial time for the successful maintenance of breast-feeding. Midwives, health visitors, and doctors who are themselves mothers are the readiest to testify to this fact and to its particular importance in the case of a mother recently delivered of her firstborn. Naish,[6] a staunch advocate of breast-feeding, has warned against irrational insistence on complete breast-feeding when convincing contraindications are present. A persistently hungry baby and a continuously miserable mother are poor advertisement for breast-feeding.

It is probable that insufficient use is made of complementary feeds as a temporary measure to tide over the difficult lactational phases which may occur in the first and third months after delivery. For success in the use of complementary feeds the full co-operation and complete

[1] *British Medical Journal*, 1938, **2**, 729.
[2] *Arch. Dis. Childh.*, 1939, **14**, 259.
[3] *British Medical Journal*, 1942, **2**, 69.
[4] *The Breast-feeding of Infants*, 1944. Ministry of Health Report, No. 91 London: H.M.S.O.
[5] *J. Amer. med. Ass.*, 1947, **135**, 340.
[6] *Breast Feeding*, 1948. London.
[7] *Arch. Dis. Childh.*, 1946, **21**, 105.
[8] *University of Leeds Medical Magazine*, 1948, **18**, 37.

confidence of the mother have to be won. Perhaps it is failure to secure this that contributes to the trend towards premature weaning, for some mothers not uncommonly discontinue breast-feeding without seeking professional advice of any kind. Antenatal care offers valuable opportunities for obtaining the mother's confidence, and preparation for breast-feeding along the lines advocated by Waller[7] has much to recommend it on both physical and psychological grounds. Intimate, unhurried, and understanding advice, whether given in the home, in the antenatal clinic, or in the lying-in ward, encourages the mother to continue to seek guidance about the feeding and care of her infant. It is important that she should not feel that the continuity of professional advice is broken, and, ideally, the mother should be present with her baby when responsibility for supervision of a "case" is being transferred by the midwife to a health visitor. Mothers are quick to sense discrepancies in the views held among those who advise them, and continuance of breast-feeding is unintentionally discouraged on occasions by the variety of advice proffered. Overlapping is not uncommon and should be avoided.

Breast-feeding is a subject calling for joint research. More opportunities are needed for the general practitioner and his medical and nursing colleagues in the maternity and child-welfare services to exchange clinical observations. Craig[8] considers that the answer to many of the problems of premature weaning are to be looked for in the home and the clinic and not in the hospital; and that the answers, when forthcoming, may well call for revision of instructions given to pupil midwives, student nurses, and medical students.

THE HADAMAR TRIAL

The Hadamar Institution, near Limburg, in Hesse-Nassau, was a mental hospital up to 1940. In January, 1941, it was given the further duty of putting to death German nationals alleged to be mentally ill and with undefined prospects of recovery. In the first seven and a half months there were 10,000 of these killings, at first by gassing and later by "medications and injections." It was a condition of the work that it should be performed in secrecy. In June, 1944, this practice was extended to non-German nationals, chiefly Poles and Russians, who allegedly suffered from advanced tuberculosis. The Hadamar trial was concerned with this second series of killings, totalling 476. It was conducted in Wiesbaden during October, 1945, by a military commission appointed by the commanding general of the United States Army, Western Military District of Germany. Its proceedings[1] provide a fantastic record of the change which can take place in the outlook and standards of a hospital once the motive for its existence has been lost.

The medical officer, Dr. Adolf Wahlmann, was not the administrative head of the institution. Neither did orders to kill have to be given, because "these people came with the aim of being killed." They came "after they had been examined by a specialist for lung tuberculosis," or, as Dr. Wahlmann later said, "I cannot know that. They might have been general practitioners." These people "came and were killed without my seeing them. . . . They came and walked in through the main gate. Then someone called up—I don't know to whom, but not to me." Dr. Wahlmann's job was "to hand out the medications. That was my task, and without medications death would not have set in." He did not know the average dose: that was "left to my chief nurses," and "the pharmacy was open to the two of them, so to speak." There were bottles containing morphine, scopolamine, chloral hydrate, and paraldehyde, and tablets of "veronal," sulphonal, and "trional." In the morning, on his desk, he received a slip of paper that the patients had died in the night, and he went down to the cellar to make an inspection which was "not thorough." He did not feel their pulses, or use a stethoscope: "I had to rely on the fact that my chief nurses had determined the death beforehand." He agreed that some of the dead "looked remarkably healthy." His motive in inspection was "to protect the personnel in case somebody accused them of cruelties or injuries." Also he signed the certificates, assuming "besides the tuberculosis, [death] from a weak heart or some other disease." Dr. Wahlmann had qualified in 1903, retired on pension from mental-hospital work in 1936 on account of heart disease, was recalled to service in 1941, and sent a year later to the Hadamar Institution. He was sentenced to hard labour for life.

Those sentenced to be hanged were Alfons Klein, the administrative head of the hospital and a member of the Nazi party, and Heinrich Ruoff and Karl Willig, the male nurses who gave the "medications and injections." There were also three further sentences of hard labour. There is little medical interest in the case of Klein: he seemed anxious in evidence to justify the administrative decision that these killings should take place. Ruoff, one of the male nurses, emphasized that, as well as injections, "we did quite a bit of work with tablets." Morphine and scopolamine were in short supply, and the men took the tablets "without any trouble." The women, who did not like tablets, were given injections. So were the children.

The killings of German nationals were not the subject of the trial, but were admitted in evidence as giving the background of the institution. They were in fact the reason that Poles and Russians—presumed to be from the German slave-labour force—were killed in this way and in this place. Two points of interest were the secrecy of the operation and the concentration of the killing in only four institutions, of which Hadamar was one. As to the first, Dr. Quanbusch, ex-chief prosecutor of Wiesbaden, testified that four or five years before the trial he reported to his superiors his suspicions that German insane persons were being put to death in asylums. He was visited by the Chief Prosecutor from Frankfurt and told that all prosecutors and court presidents had been invited to a conference in Berlin where, after viewing some pictures of insane persons, they were shown a photostat copy of an order from Hitler authorizing the killing of insane persons by physicians in the institutions under certain undefined conditions. This was classified as a "State Secret Affair," and it was no doubt this secrecy which led to the concentration of killings in particular institutions. The result was that what had been a hospital became a place of execution, acting not on its own medical judgment—apart from principle—but on decisions taken by others.

[1] *The Hadamar Trial*. War Crimes Trials, 1949, Vol. IV. General Editor, the Rt. Hon. Sir David Maxwell Fyfe. (Pp. 250. 10s.) London: William Hodge.

INSTITUTES OF MEDICAL STUDIES IN THE U.S.S.R.

BY

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The provision of facilities enabling physicians to undertake advanced studies to improve their theoretical knowledge and practical qualifications is an important part of the public health system of the U.S.S.R. In the Soviet Union the advanced training institutes for physicians at the hospitals, polyclinics, maternity homes, maternity and child-welfare centres, and medical educational institutions are under the central authority of the State, which organizes and finances them.

The Soviet Government has issued a number of decrees on advanced medical studies. After every 3 to 5 years' work in the provinces every physician has the right to advanced training at State expense. During training he continues to draw his pay from his place of employment. The doctors attending the courses are provided with living quarters and all other conditions ensuring effective study.

Before the October revolution in 1917 Russia had only one institute for advanced medical studies. It was in St. Petersburg, and very few physicians could afford the cost of studying there. Only 9,906 physicians graduated from the institute in the 32 years of its existence (from 1885 to 1917), but in 25 years of Soviet power over 37,000 physicians graduated from it—that is, 1,500 a year, or five times as many as before the revolution.

The Soviet Government opened ten similar institutes in Moscow, Kazan, Kiev, Kharkov, Odessa, Minsk, Novosibirsk, Tashkent, Tbilisi, and Baku. The largest is the Central Institute, in Moscow, founded in 1930. Over 52,000 physicians have graduated from it in the 18 years of its existence—an average of 3,000 a year.

There are two systems of raising the qualifications of physicians: (1) Specialization—that is, learning a new medical specialty; and (2) advanced training, when the specialist gains further knowledge of an already acquired specialty. The course for advanced training used to be of 2 to 3 months' duration, but now it has been prolonged to 4–6 months and in some cases to 12 months.

This course covers the main branches of medicine—such as therapy, surgery, paediatrics—and also special subjects such as endocrinology, helminthology, laboratory testing, diet, remedial physical culture, and so on.

Physicians can improve their qualifications in various branches of medical science, including patho-physiology, pathological anatomy, and other theoretical disciplines.

The Central Institute

The Central Institute of Advanced Medical Studies has 49 chairs distributed among the three faculties of surgery, therapy, and sanitary hygiene. The teaching staff includes seven members of the Academy of Medical Sciences, six corresponding members, 43 doctors of medicine, and 111 masters of science (medicine).

The major clinics of the Central Institute are in the Botkin Hospital, the largest in Moscow. The chairs of theoretical subjects and of hygiene, such as epidemiology, microbiology, communal hygiene, food, and industrial hygiene, are part of the Institute's organization. The chair of public health is of special importance. The task of this department is to train skilled administrators and organizers of the public health service. The training course is 12 months.

The Institute maintains contact with its graduates through the consultation bureau, which advises them on various theoretical and practical subjects. Hundreds of physicians in the provinces are engaged in scientific work under the guidance of the Institute. In the second half of 1948 alone twenty physicians defended their theses on material received from the Institute.

The serial publications, *A Practical Physician's Library*, issued by the Institute and consisting of a number of monographs on problems of theory and practice, serve as an important means of contact between the physicians and the Institute. The Institute has its publishing house, which issued 40 books in about 500,000 copies in the last two years. It also has a library with 70,000 volumes.

The Central Institute sends its teachers out to various places. Some teams have already visited the Lithuanian, Latvian, Esthonian, Byelorussian, Central Asian, and Transcaucasian Republics.

One of the most important tasks of the Institute is training postgraduate students and housemen in all the medical branches represented at the Institute. This course of training is three years.

The five-year plan of the Ministry of Health envisages advanced training and specialization for most physicians. The major part of the plan will be carried out by the Central Institute of Advanced Medical Studies in Moscow.

LEBANON HOSPITAL FOR MENTAL DISEASES

The 50th annual meeting of the Lebanon Hospital for Mental Diseases was held in London on June 15, with Mr. H. Lyn Harris, chairman of the general committtee, presiding. The history of the hospital and its background was sketched by Mr. Albert Hourani, who gave a vivid picture of the primitive Lebanon of fifty years ago as compared with the modern republic. The hospital itself had shared in these changes. From being a place for the segregation of the mentally afflicted, and then a place for their treatment and relief, it had become a centre of demonstration, experiment, and training for work in mental diseases in the Middle East.

Dr. J. Tylor Fox, on behalf of the medical director, Dr. R. B. Robertson, presented the medical report. There were 454 patients admitted during 1948 and 375 discharged, both figures showing an increase of some 120 on the previous year; 320 patients were now in residence. Electric convulsion therapy was used during the year in 171 cases, chiefly of schizophrenia and affective psychoses, with recovery in 70, relief in 41, and temporary relief in 28. Prefrontal leucotomy had been undertaken by Dr. Jidijan, of the American University at Beirut, on two patients. This was believed to be the first time the operation had been performed in the Middle East. One interesting and important departure was the setting up of an out-patient neuropsychiatric clinic at Beirut. Dr. Tylor Fox said that the turnover of the hospital for its size was larger than that of any mental hospital in England. In physical treatment and in occupational therapy it was a pioneer in its part of the world. Four-year medical students from the American University went there for training in psychiatry. Even such a modern feature as the hospital club for staff and patients had been instituted. Short addresses were given by other sympathizers with the work, including the minister of the Swiss Church in London.

ROYAL SOCIETY OF MEDICINE

NEW HONORARY FELLOWS

Sir Henry Dale, O.M., who was re-elected for a second year as President of the Royal Society of Medicine at the annual meeting of the Society on July 5, presented on the same occasion diplomas to five newly elected honorary Fellows.

In making the presentation to Sir Ernest Rock Carling he referred to his innumerable activities, especially on the Radium Commission and the King Edward's Hospital Fund, and described him as a distinguished surgeon, a great servant of the community, and a valued counsellor in the Society. Dr. Brock Chisholm he greeted as a Canadian and as one who by virtue of high international office was charged with great responsibility for the co-ordination of medical activities over a large part of the world. He was most fittingly the first Director-General of the World Health Organization. The next

diploma was presented to a recent president of the Society, Sir Gordon Gordon-Taylor. Sir Henry Dale referred to Sir Gordon's distinguished record in the war, when he was "arrayed as it seemed with such natural fitness in the uniform of a rear-admiral." His eminence in surgery and his gift for imparting knowledge were recognized all over the world, as witnessed by the fact that Melbourne, Toronto, and Athens had honoured him with degrees. His readiness to serve the Society was a great support to its present president. The fourth diploma was presented, *in absentia*, to Dr. Alan Gregg, head of the division of medicine of the Rockefeller Foundation, who had shown most sympathetic understanding of the needs and true spirit of research. "I find it impossible to suppose," said Sir Henry Dale, "that any internationally constituted organization within any future which we can discern will be able to devise quite such wise and independent distribution of support for medical research on so completely an international basis as that which the Rockefeller Foundation has achieved with such success." The last recipient was Professor René Leriche, of Paris, who was described as one of the most fertile and original workers in the field of surgery. The president had a special interest in welcoming Professor Leriche to honorary fellowship, because he was an exponent of surgery which had its roots in experimental physiology. He specially mentioned his work on the surgery of the sympathetic system. He already held the Lister Medal for surgical research.

After the presentations the ordinary business of the annual meeting proceeded. The report of Council showed that the Society had 9,389 members, a gain of 360 on the year, and that 1,393 members were resident abroad. A vote of thanks was accorded to the retiring honorary secretary, Mr. W. A. Pool, and the retiring vice-presidents (that is, presidents of sections) and other members of Council.

CONGENITAL PULMONARY STENOSIS

SURGICAL TREATMENT

The second Alexander Simpson-Smith Memorial Lecture under the auspices of the West London Hospital Medical School was given by Mr. R. C. Brock on June 15.

Mr. Brock opened by saying that the relief of certain forms of cyanotic congenital heart disease had aroused considerable interest during the past two or three years. The present seemed a suitable time to review the position and to assess the results of the Blalock-Taussig operation and its modifications. The problem of the "blue baby" had always been a tragic one, but it was only since operation became possible that the incidence and the full tragedy of the condition had been manifest. Many of these children had been hidden away, confined to their house or room for the greater part of their lives. There were children as old as 6 who had never been able to walk.

The mortality during the first few years of life was high, and only a few patients who reached the twenties were able to carry on any useful employment. At the congenital heart clinic at Guy's Hospital during 15 months 340 cases (185 male, 155 female) had been seen. One in two reached the age of 7, one in five the age of 14, and less than one in 10 the age of 21. During those 15 months 24 patients had died while awaiting admission to hospital.

Although the operation carried a considerable risk, the risk in most cases was far less than that of leaving the condition untreated. It was not enough for the surgeon to acquaint himself with the technical details of vascular anastomosis, nor was it a type of surgery for the lone operator. Team work was essential, and at Guy's 15 people were actively engaged in the management of these cases. As soon as it became possible to operate on cases of this kind, accuracy in diagnosis ceased to be an academic refinement. Clinical assessment was of first importance, aided by routine radiography.

Pre-operative Assessment

Blalock and Taussig had pointed out that the cyanosis and disability were due to the mixing of the venous and arterial blood in the heart and to inadequacy of the supply of blood to the lungs; the most important element in their contribution was the elucidation of the part played by this second factor. The pulmonary blood flow must be assessed in each case. By radiography and radioscopy it was possible to exclude those cases in which there was evidence of plentiful or excessive blood flow in the lung, as shown by the degree of vascularity. Mr. Brock here illustrated methods of cardiac catheterization and angiocardiography. By angiocardiograms it was easy to demonstrate right and left shunt, and by studying the anatomical arrangement of the vessels the surgeon could form an idea whether they were likely to be suitable for anastomosis.

Owing to the smallness of the vessels, operation before the age of 2 was not recommended by Blalock. The policy at Guy's had been not to operate much before the age of 5. Older children on the waiting-list could not with safety be left to wait as long as the younger. Blalock also, if possible, avoided operation on patients over the age of 20, and with this the lecturer fully agreed. The oldest patient operated on successfully at Guy's was aged 29.

Mr. Brock went on to describe Potts's operation, which there had been a tendency to adopt because it appeared to be quicker and easier than Blalock's operation. If it was possible to mobilize the subclavian artery to make an effective anastomosis, it seemed to him unjustifiable to use the aorta. In the choice between the subclavian and the aorta he could not feel it right to choose the aorta; if anything happened to that important structure there were no means of retrieving the situation. The special advantage of Potts's operation was in those cases in which the subclavian artery was very small or very short. He felt that the use of the carotid or innominate artery could not be justified.

Blalock recommended an antero-lateral intercostal approach, but the lecturer himself had given that up after trial, preferring a postero-lateral approach. He had also, after 50 cases, abandoned the approach from the right side. By working from the left side a very thorough examination could be made. There was a marked tendency for bleeding to occur after operation, and he made it a rule to drain the chest in every case. That was an important point for those who were intending to embark upon these operations.

Mortality and Results

In his latest report on 610 cases Blalock gave an overall mortality of 17%. In the first 50 cases at Guy's seven patients had been lost, a mortality of 14%. The total number of cases in which Blalock's or Potts's operation had been employed was 86, with 13 deaths, a mortality of 15%. Among these 86 were a large number of very poor risks. Blalock stated the results to be excellent in 75% of his cases. Among the first 50 cases at Guy's, in addition to the seven deaths, there were three in which there was no improvement, but in 66% the result was described as "almost perfect." He mentioned the case of a lad who previously could not walk 10 yards, but after operation was able to ride a motor-cycle. A young woman who was rescued from a condition of helplessness by operation was now married and pregnant and the pregnancy was being allowed to continue.

Mr. Brock finally discussed pulmonary valvular stenosis and its relief by valvulotomy, which he had performed with success in five cases, and also infundibular stenosis and its relief by direct operation, which had been achieved with success in five cases. All these cardiac operations, he said, caused considerable anxiety and raised many difficult problems, but he felt that it was only by dealing with these cases that the feasibility or otherwise of such operations could be judged. Although most of the present work was directed to the relief of congenital abnormalities, the relief of acquired heart lesions was now feasible in some cases, and here the knowledge obtained by the surgeon in dealing with congenital lesions must help.

Reference was made by Mr. Brock himself, by General Neil Cantlie, who took the chair, and by Dr. Geoffrey Konstam, who proposed the vote of thanks to the lecturer, to the promising young surgeon, Alexander Simpson-Smith, in whose memory the lecture was founded. Simpson-Smith was taken prisoner at Tobruk. He made a gallant attempt to escape to the British lines, and his body was subsequently found.

Nova et Vetera

ST. THOMAS'S PARISH VESTRY RECORDS AND A BODY-SNATCHING INCIDENT

There is now available for those who wish to study them in the library at County Hall, London, a collection of books and documents of the vestry of St. Thomas's Parish, Bermondsey, which the L.C.C. has recently acquired. St. Thomas's parish comprised St. Thomas's Hospital on its old site, Guy's Hospital, and a small area around : Horwood's map showing the parish boundaries in 1819 is reproduced in Parsons's *History of St. Thomas's Hospital*.[1] It ceased to be a separate civil parish in 1899.[2] It has been suggested that it was a separate parish even before the church was built, and was certainly one in 1378.[3] For ecclesiastical purposes it was merged by Order in Council in 1898 with St. Saviour's (now St. Saviour's with St. Peter's), the parish and hospital church being to-day the chapter-house of Southwark Cathedral.

The muniments acquired by the L.C.C. cover the period from the latter part of the seventeenth century to the early part of the nineteenth. As is to be expected, there are references in the records to St. Thomas's Hospital and to Guy's Hospital. In 1703 the vestry declined to appoint a committee to negotiate with the former the exchange of almshouses for other houses "untill the Gouvrnors of the said Hospital have given ye vestry Satisfaction in Relation to the Vaults under our Church."[4] Another time there was amicable discussion on whether the parish or the hospital should pay for the "surplices."[5] The underwardens' accounts for 1754 include an item : "ye Hospitals Beadles s5."[6] At a vestry held in the school-room on March 22, 1805, it was reported that "the Treasurers of St Thomas's and Guy's Hospitals were authoris'd by their Committees to advance the Parish the Sum of £150, towards defraying the Expence demanded, on the failure of raising seven Men for the Army of Defence." As that left a deficiency of £58, the meeting decided to raise a shilling in the pound rate.[7] In 1815 there was friction between the parish and the hospitals about whether certain persons connected with the hospitals should pay rates. The parish won a test case at the Quarter Sessions. The counsel representing the vestry thereupon "proposed to give up the Cases of Mary Boyce the Cook of Guy's Hospital, and of John Spooner the Porter, Cathne Wheeler the Cook, Jane Wright the Matron, and Jas Patterson the Porter of St Thomas's Hospital, the aggregate amount of whose Rates was inconsiderable," if certain other appeals were abandoned.[7]

Body-snatching

From the medical point of view, however, perhaps the most interesting item in the records is the transcription in the minute-book in 1795 of a report of a general meeting held at the Crown and Anchor Tavern to consider the "lately discovered Depredations in Lambeth Burial Ground." The account given at the meeting states :

"... It appeared, that the robberies of the said Burial Grounds, were discovered by three men being disturbed as they were conveying from thence five human bodies in three sacks, in the night of the 18th of February last.

"That in consequence of such discovery, people of all descriptions, whose relations had been interred in that Ground, resorted thereto, and demanded to dig for them; which being refused they in great numbers forced their way in, and in spight of every effort the Parish Officers could use, began like mad people to tear up the ground; at the same time, charging the Officers and every one that offered them any opposition, with being privy to the robberies, and in general terms threatening them: thus circumstanced, the Parish Officers finding nothing but down-right force, (and that of more strength than the civil power) could prevent the populace, and fearing to bring on a riot (which in its effects might produce the most serious consequences) after having used every effort, short of force, were necessitated to give way, and let the people go on in their searches; by which a great number of empty coffins were discovered, the corpses having been stolen from them; great distress and agitation of mind was manifest in every one, and some, in a kind of phrensy, ran away with the coffins of their deceased relations; and the generality of the populace were so ripe for mischief, that they attacked a house with stones and brick-bats, upon the bare suspicion that the occupier had been concerned in, or privy to the robbery of the ground, and it was with difficulty they were prevented from demolishing it.

"To restore order, and discover the offenders if possible, a large reward was offered, and the committee aforesaid appointed; by whose enquiries, it was found that the Grave Digger, and three other persons were the robbers, and that the bodies had been conveyed away in a coach to different people for various purposes, as was made appear to them by informations upon oath; the material parts of one of which informations being now read, showed, that within the knowledge of the informant, eight surgeons of public repute, and a man who calls himself an Articulator (and by hand-bills openly avows the trade, exclusive of others of less note) are in the constant habit of buying stolen dead bodies, during the winter half year; in whose service the following fifteen persons are generally employed, namely, Samuel Arnot, alias Harding; John Gilmore, Thomas Gilmore, Thomas Pain, Peter McIntire, alias Mc Intosh, James Profit, Jeremiah Keese, Moris Hogarty, —— White, a man called Long John the Coachman, John Butler, John Howison, Samuel Hatton, John Parker; and Henry Wheeler, whose depredations have extended to thirty Burial Grounds that the informant knows of; and that grave diggers, and those intrusted with the care of Burial Grounds, are frequently accessory to the robberies, and receive five shillings per Corpse for every one, that with their privily is carried off, by which means many hundreds are taken from their graves annually.

"That with the Surgeons and with the men above alluded to, there is a set price for dead bodies, Viz. for an Adult, two guineas and a Crown, and for every one under age, six shillings for the first foot, and nine per inch for all it measures more in length; that the bodies thus procured are used here in various ways, and the flesh by some burnt, by others buried, and by others the informant did not know how it was disposed of; that some bodies are prepared and made into Skeletons, and sent to America, and the West Indies; and many with the flesh on, or made into Skeletons, are sent into different parts of the Kingdom.

"By another informant upon oath, the whole of which was also now read, it appeared that the aforesaid Articulator, makes the most wanton use of some that fall into his hands, substituting human skulls for nail boxes, and having the Skeleton of a Child, instead of a doll, for his own child to play with.

"The Chairman also acquainted the meeting, that from other evidence (which though not yet upon Oath yet such as may be relied on) information is given that experiments have been tried and perfected, whereby human flesh has been converted into a substance like Spermaceti, and candles made of it, and that Soap has also been made of the same material."

The representatives of the various London parishes who attended the meeting were indignant at the state of the law over body-snatching. and a subsequent meeting decided to try to get a Bill passed to make the stealing of bodies a capital offence. St. Thomas's vestry decided to subscribe five guineas to the expenses of such a Bill.[7]

LAURENCE DOPSON.

The licensing of foreign medical graduates in the United States has recently been discussed by Barker and Mooney in the *Journal of the American Medical Association* (1949, **140**, 10). Twenty-three States will not admit graduates of any schools outside the United States and Canada. At the time of writing there were eight States in which recent graduates of foreign medical schools may be permitted to practise. In addition, graduates of certain schools in Great Britain may be acceptable in several other States. It appears that two States, Mississipi and Rhode Island, admit foreign graduates without much restriction. The rules made by the various State examining boards change rapidly, and it is difficult to provide completely reliable and up-to-date information.

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[1] Parsons, F. G., *The History of St. Thomas's Hospital*, 1932, **1**, facing p. 126. London.
[2] London Government Act (62–63 Vict., c. 14).
[3] Parsons, F. G., *The History of St. Thomas's Hospital*, 1932, **1**, 52.
[4] L.C.C. Muniments, P/71/213.
[5] Ibid., P/11/215.
[6] Ibid., P/71/2.
[7] Ibid., P/71/216.

ONE HUNDRED AND SEVENTEENTH ANNUAL MEETING

of the

British Medical Association

HELD AT HARROGATE, JUNE, 1949

THE SECTIONS

SUMMARY OF PROCEEDINGS

In subsequent issues there will be printed in the BRITISH MEDICAL JOURNAL *a few of the opening papers read at the Scientific Sections. All the papers will be published in full in a separate volume of Proceedings. The reports of the discussions in this and successive issues are intended to give members who were not present a general idea of the proceedings.*

SECTION OF MEDICINE

Tuesday, June 28

Diabetes Mellitus

After Professor R. E. TUNBRIDGE (Leeds), president, had opened the meeting, Professor A. P. THOMSON (Birmingham) took the chair, and Dr. R. D. LAWRENCE (London) opened a discussion on diabetes mellitus. He said that recent experiments, especially with tracer elements, had shown that a large amount of the excess of carbohydrate taken into the body was rapidly changed into and stored as depot fat. Chemical metabolism was dependent on enzyme actions, accelerated or retarded by hormone influences; glucose was unavailable until it had been changed into phosphate compounds. Insulin stimulated the enzyme hexokinase, which formed hexase phosphate; after that, other enzyme systems took on further processes in carbohydrate utilization. Insulin thus made an excess of glucose available by phosphorylation, first for immediate burning, secondly for a glycogen store, and thirdly and largely for storage as fat.

Diabetes might be divided into two types—they might even be two distinct diseases. There was the middle-aged obese person, particularly women at the menopause, in whom the urine was laden with sugar but there was no ketosis. That type should rightly be treated by diet alone, a diet low in carbohydrate, fat, and calories, with the aim of reducing weight. When those patients had lost weight the sugar disappeared. The use of insulin was bad, for it tended to continue and even increase the obesity, which was the essential defect. The second type, with wasting and ketosis, occurred mostly in young adults, and the presence of ketosis indicated a real deficiency in insulin production requiring substitution injections. Thus the test for ketones was of the greatest importance.

There were now several types of insulin (see Table). Their difference in time and strength must be clearly appreciated for their efficient use in treatment. Dosage must be regulated by trial and error; there was no individual dose.

There were two groups of the type of diabetic who needed insulin. The severe diabetic produced no endogenous insulin, responded rapidly for some hours while insulin absorption was strong, but relapsed into a severe diabetic state when absorption ended. There was also the milder group of patients who produced some endogenous insulin but who needed some exogenous insulin after eating a reasonable amount of carbohydrate.

Professor R. E. TUNBRIDGE (Leeds) said that experimentalists had shown that in diabetes in animals, produced by partial pancreatectomy or alloxan, a limitation of calorie intake slowed

Insulin in Adults

Type of Insulin	In Doses	Duration of Action	Commonest Time of Hypoglycaemia	Remarks on Type of Action
Soluble	to 10 units to 20 „ to 40 „ +	5–6 hours 6–8 „ 10–12 with big doses	2–4 hours 3–6 „ 6–8 „	Begins action within ½ hour Quick and strong Balances much carbohydrate
Protamine zinc insulin	to 10 units to 20 „ to 30 „ 40 units +	6–8 hours to 12–18 hours to 18–24 „ 24 hours or longer	5 hours 8–12 hours 8–20 „ 16–24 „	Begins action within 3 hours Action weak but prolonged Balances carbohydrate poorly
Delay (retard) and globin zinc insulin	to 20 units to 40 „ + to 60–100 units +	8–10 hours 12–16 „ 24+ „	5–8 hours 9–10 „ 10–24 „	Much nearer soluble insulin in action than to P.Z. insulin

the rate of development of hyperglycaemia and ketosis, and statisticians had shown that there had been a decline in mortality from diabetes mellitus after the introduction of rationing during both world wars. It seemed that calorie restriction was essential in constructing a diabetic diet. He suggested the following as being reasonable diets: (1) For the obese, a period on a diet of 1,000 to 1,500 calories; (2) for the elderly, a diet of 1,200 to 1,800 calories; (3) for the remainder of the diabetics, a calorie value of 1,800 to 2,400. Only a small percentage of patients actually took the diets prescribed. Of 94 patients attending the Leeds General Infirmary who recorded their food intake for one complete week in March, 1948, together with its cost and other relevant sociological factors, 16 yielded satisfactory results; in 44 the findings were tolerably satisfactory, and in 34 hopeless. The causes were (1) lack of intelligence and inadequate training; (2) economic; and (3) sociological. Unfortunately the intelligence quota of many out-patients was such that it was almost impossible to teach them the intelligent use of equivalents. The economic factor was usually overlooked. The survey showed that the cost to the average diabetic patient was at least 25s. per week (compared with an average of 10s. per week for non-diabetic diet), and only in one or two instances had it been possible for a person to maintain an adequate diet at a lower cost.

Mr. D. A. HALL, Ph.D. (Leeds), described a method of estimating the blood sugar—a micro-colorimetric method repeatable with great accuracy, quick, simple, requiring little apparatus, and with durable reagents. Blood, 0.1 ml., was washed into 3.7 ml. of isotonic copper and sodium sulphate solution (320 ml. of 3% $Na_2SO_4.12H_2O$, 30 ml. of 7% $CuSO_4.5H_2O$). The protein was precipitated by 4 drops of 4% sodium tungstate. The mixture was then shaken and filtered through fluted paper into a tube graduated at 1, 1.5, 2, and 5 ml. 1 ml. was collected; Solution A (1.3% $CuSO_4.5H_2O$) was added to 1.5 ml., and then Solution B (2.4% sodium potassium tartrate, 4% Na_2CO_3, 5% $NaHCO_3$, 3.68% potassium oxalate, 0.14% KI). The tube was plugged with cotton-wool and boiled for 10 minutes. After cooling, phosphomolybdate solution of Folin and Wu (1920) was added to the 5 ml. mark. The colour was then compared with standards.

Dr. A. J. BALLANTYNE (Glasgow) described the ocular changes in diabetes, and said that the late stage was not often seen because of cataracts, vitreous opacities, and haemorrhages, but the disk became obliterated by infiltration and oedema, and there was gross infiltration throughout the fundus. There was no cure for diabetic retinopathy.

Mr. H. H. FOURACRE BARNS (London) said that pregnancy complicated by diabetes mellitus was associated with a high mortality rate. Despite the introduction of insulin the foetal mortality rate had remained at approximately 40%. Large babies and a high foetal mortality rate occurred also in the case of women who subsequently developed diabetes. It had been thought that overactivity of the maternal anterior pituitary gland might be responsible. A series of diabetic pregnant women had therefore been treated with 35–40 mg. stilboestrol

daily; so far 16 had been treated, with four neonatal deaths. There had been no reduction of the tendency to produce large infants, which would suggest that either their hypothesis of the diabetogenic growth complex causing gigantism was incorrect or stilboestrol in the dosage given was not effective in suppressing the production of that hormone.

Dr. CHARLES ROLLAND (Edinburgh) thought it possible that overactivity of the anterior lobe of the pituitary might be the common cause of diabetes, large foetus, and pre-eclamptic toxaemia.

Dr. R. G. PALEY (Leeds) said that cutaneous reactions occurred in 55.8% of patients. They were due to impurities in the insulin and could be greatly reduced by using six-times recrystallized insulin solution. In 30% of patients there was a spontaneous desensitization, and in the rest the symptoms were rarely severe enough to indicate the purified insulin. Dr. K. M. A. PERRY (London) remarked that 1 in 40 diabetics developed pulmonary tuberculosis, and therefore it was essential to examine their chests by *x* rays at frequent intervals. Dr. R. R. BOMFORD (London) emphasized that growing adolescents were the exception to the rule of dietary restriction. They must have enough food to grow.

Dr. ELLIOT P. JOSLIN (Boston, U.S.A.), described by the chairman as the "grand old man" of diabetes and as essentially a general physician, discussed the changes in treatment that had taken place in his lifetime. He had treated diabetes for 25 years before insulin; now diabetic coma had almost disappeared. Diabetes was commoner than generally believed. In his home town the U.S. Public Health Service had carried out a survey of the 5,000 inhabitants, and besides the 40 known diabetics they had found 30 more unknown ones. The doctor treating diabetes who maintained a strict control over his patients had great opportunities for studying disease and learning of its beginnings. Of the 229 deaths which had occurred in his diabetic patients only 5 had resulted from the diabetes. Diabetes was universal; it was as common in rich towns as in poor towns. It was as common in the Red Indian as in the negro and white populations. In the 150 millions in the United States there were one million known diabetics and probably as many unknown.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Tuesday, June 28

Breech Presentation and its Management

Mr. R. NEWTON (Manchester) said that many statistics on breech presentation and its management had been produced since the Annual Meeting at Belfast in 1937, when Macafee and McClure surveyed a series of 349 breech deliveries, with a corrected foetal mortality in primiparae of 10%, in multiparae of 3.42%, and in all cases of 6.10%. Potter, of Buffalo, had fired the imagination with his good results, and at the B.M.A. meeting at Eastbourne in 1931 Holland, Gibberd, and Bourne had pointed out the heavy loss of foetal life in breech deliveries. Since 1931 external version had come to be accepted by nearly all authorities. Keith Vartan had shown that by the thirty-fourth week most cases had undergone spontaneous version and that few would undergo reversion. The reversion rate was higher after external version, "a fact which suggests that the obstetrician is not so clever as the foetus in deciding when the operation should be done." External version was best accomplished by pushing on one pole of the foetus and turning the easiest way. At Withington Hospital, Manchester, he had found that there was a foetal mortality of 2.6% in 116 successful versions. If version failed, the obstetrician's first duty was to exclude the possibility of contracted pelvis.

The first stage of a breech delivery could be managed in much the same way as a normal vertex presentation. There was greater likelihood of prolapse of the cord when the membranes ruptured. Several authors—for example, Heaton and Guyer—had shown that early rupture of the membranes, which was more common in breech deliveries, did not contribute to foetal mortality. Difficulties arose in the second stage of labour. Sir Eardley Holland had emphasized that the foetus died of trauma, always or nearly always—and nearly always at the outlet. Other causes of death were not important.

Mr. Newton stressed the need for attention to detail. He practised conservative methods of delivery, but when difficulty arose he undertook complete extraction under general anaesthesia. This presupposed a trained anaesthetist. Episiotomy, he thought, was nearly a necessity in every primipara, but he preferred conservatism and the insertion of a stitch as soon as the perineum showed signs of tearing. It was seldom that the tear extended when this was done. For the arms he used Potter's or Lövset's method; for the head, the Mauriceau grip, but forceps always in difficult cases.

The speaker went on to analyse 12 years' booked cases at St. Mary's Hospital, Manchester. They showed a corrected foetal mortality of 7.1%.

Foetal Mortality

Total Number of Cases	Caesarean Section	Remainder	Gross Foetal Mortality	Corrected Foetal Mortality			
				Twins Included	Second Twins Excluded	First Twins Excluded	Prolapsed Cord Excluded
1,148	147	1,001	26·5%	6·6%	6·8%	7·3%	6·1%
Corrected to 5½ lb. (2·5 kg.)				6·8%	7·4%	7·9%	6·5%

Foetal Mortality Rates in Primiparae and Multiparae

	Gross Foetal Mortality	Twins Included	Second Twins Excluded	First Twins Excluded	Prolapsed Cord Excluded
Primiparae	21·5%	6·7%	7·1%	7·4%	6·5%
Multiparae ..	34%	6%	6·2%	6·9%	5·1%
Corrected to 5½ lb. (2·5 kg.) ..					
Primiparae		7·3%	7·5%	7·5%	7·5%
Multiparae ..		6·2%	7·3%	8·7%	6·5%

The corrected foetal mortality for the last five years was as follows:

Weight	Corrected Foetal Mortality
From 3–4 lb. (1·4–1·8 kg.)	40%
4–5 lb. (1·8–2·3 kg.)	28%
5–6 lb. (2·3–2·7 kg.)	3%
6–7 lb. (2·7–3·2 kg.)	6%
7–8 lb. (3·2–3·6 kg.)	4·5%
Over 8 lb. (3·6 kg.)	24%

By treating contracted pelvis, large babies, or prolonged labour by caesarean section, more babies could have been saved. There remained a hard core of "unexplained" foetal deaths, as well as those with prolapse of the cord. The answer to this was supervision by a team of experienced obstetricians and probably the more common use of breech extraction.

Dr. J. LÖVSET (Bergen) was welcomed as a distinguished visitor responsible for a marked advance in the treatment of breech presentation. He reviewed the conditions of practice in Norway. He stated that in breech deliveries he did not interfere before the buttocks were born if labour was proceeding normally. He considered that there were three indications for bringing down a leg: (1) mechanical disproportion (compound presentation or extended legs); (2) functional dystocia when incision of the cervix might be required at the same time that the leg was brought down; (3) signs of distress in the mother or foetus. Which leg was brought down was unimportant.

Dr. Lövset's material comprised breech deliveries over the last 14 years at the Hospital for Women in Bergen. During the first seven years the deliveries were managed conservatively, whereas during 1941–7 they were treated as he had previously indicated. Twins, versions, and extractions were excluded. The corrected foetal mortality rate for 1934–40 was 9.86% and for 1940–7 3.93%. He advised a careful watch during labour and delivery, and the prophylactic bringing down of the leg.

Mr. B. L. JEAFFRESON (Leeds) considered only primigravidae. He said that the factors favouring successful delivery were as follows. (1) A small child. Labour should be induced if there was evidence that the child was likely to be larger than one weighing 7 lb. (3.2 kg.) (2) A pelvis of normal size and shape. In all cases this should be investigated by internal palpation or by *x*-ray pelvimetry before labour started. (3) Relaxation of the pelvic floor and vulval orifice. It was possible that this could be obtained by the exercises advocated by Grantly Dick Read (see *Journal*, April 16, p. 651). (4) Adequate experience on the part of the obstetrician. (5) Deep surgical anaesthesia. The practice of the same doctor anaesthetizing the patient and conducting the delivery was to be condemned. Caesarean section was to be considered only when the patient was elderly or the delivery was made difficult by some other obstetric complication.

Mr. C. MCINTOSH MARSHALL (Liverpool) said that the foetal mortality in breech delivery was primarily and finally dependent more upon the weight—that is, the size—of the infant than upon any other single factor. He produced figures, which are shortly to be published, in support of this thesis. Three general rules could be disregarded only at the expense of foetal lives: (1) There should be no vaginal breech delivery, whatever the weight of the infant, through an abnormal or contracted pelvis. (2) There should be no vaginal delivery of an infant over 7 lb. (3.2 kg.) through a "borderline" pelvis. (3) There should be no vaginal delivery through a normal pelvis if the weight of the infant was estimated to be over 9 lb. (4.1 kg.). These rules may be relaxed slightly in the case of multigravidae.

Mr. Marshall analysed 686 breech deliveries in 10 years. There were 27 foetal deaths—a mortality rate of 3.94%. And to show that progress was being made, in the last five years there were 374 deliveries with a mortality rate of 3.21%.

Professor A. M. CLAYE, who presided, opened the discussion by questioning Mr. Marshall's choice of different weight categories. He found it difficult to judge the weight of the foetus *in utero*. Mr. T. F. REDMAN (Manchester) said there was little justification for claiming that foetal losses in breech delivery could be reduced to the losses in vertex delivery. Certain factors—for example, prolapsed cord and difficulty at the brim—could be circumvented only by avoiding breech presentation. He believed, and produced evidence to show, that these factors operated as frequently in multigravidae as in primigravidae. Consequently, multiparae should receive just as much obstetrical care as primigravidae. All breech presentations should be delivered in hospital under responsible supervision.

Others taking part in the discussion were Mr. A. L. GUNN (London), Dame LOUISE MCILROY (London), Dr. ALAN BARKER (East Kent), Mr. G. GORDON LENNON (Oxford), and Dr. S. L. NAVARATNAM (Colombo).

Dr. LÖVSET in reply said he had never seen prolapse of the cord after bringing down a leg. He showed a film of the Lövset method of dealing with the shoulders. Mr. MARSHALL showed two films of breech delivery, and Mr. NEWTON summed up the discussion.

SECTION OF PATHOLOGY AND BACTERIOLOGY

Tuesday, June 28

Laboratory Diagnosis and Prevention of Whooping-cough

Professor ROBERT CRUICKSHANK (London) pointed out that whooping-cough was to-day the most serious of the specific fevers of childhood. It attacked some 70% of children and was an infection of early life with two-thirds of the cases in pre-school children and more than half the deaths in the first year of life. It was generally accepted that the infection was caused by *Haemophilus pertussis*, which could be cultivated from nasopharyngeal swabs or bronchial secretion on Bordet-Gengou medium.

Methods of controlling spread of the infection might be by early diagnosis and isolation of the primary case in nursery or family; by passive protection of contacts with specific antiserum; and by active immunization of susceptible children with pertussis vaccine. Because early clinical diagnosis was difficult when the child was most infectious, and because the cough-plate method was not easily carried out in domiciliary practice, they had used either swabs passed through the mouth to the postnasal space (postnasal swab) or fine swabs on flexible wire passed through the nose (pernasal swab). The latter method, used on infants between 6 and 18 months of age, had given a higher proportion of positive results and more profuse growth, practically free of contaminants, compared with the postnasal swab taken from the same infants at the same time. As an example of the value of these bacteriological methods of diagnosis, in the practice of one doctor swabs or cough-plates from children with suspicious coughs had in one year yielded positive cultures in 24 out of 36 cases subsequently confirmed clinically as pertussis; 23 of the positive results came from 24 early doubtful cases.

The demonstration of specific antibody by complement fixation or agglutination reactions was of no value for early diagnosis, as the antibody developed late in the infection, but a positive result could be used to confirm a dubious clinical history up to four to six months after the onset.

Early bacteriological diagnosis of a primary case in day or residential nurseries allowed the effective use of specific antiserum, prepared in horses or rabbits, for the passive protection of susceptible contacts. In three outbreaks antiserum had been given to half of the susceptible contacts, and the results indicated that the serum gave temporary protection if injected during the incubation period. Because of the risk of reactions to a foreign protein, hyperimmune serum, prepared by the immunization of adult donors, had been used, apparently with success, by American workers both for prophylaxis and for treatment. As the dose was 20 ml. repeated once or twice, it seemed a logical step to fractionate such hyperimmune serum and use the concentrated antibody-containing globulin.

At first sight active immunization against whooping-cough seemed to present little difficulty, since the infecting organisms were all serologically of one type and the clinical infection resulted in a high degree of immunity. Early experience with pertussis vaccines, before it was realized that smooth (phase I) virulent strains must be used, was disappointing, but even more recently different trials in America had given discrepant results, and a controlled trial among nursery children with a British vaccine had failed to show any protection. Obviously, with the increasing interest in the prophylactic use of pertussis vaccine, it became desirable to carry out controlled field trials with vaccines prepared in different ways to find out if any vaccine gave sufficient protection to justify its large-scale use and, if so, what were the essential requirements in a good vaccine. A committee of the Medical Research Council had been attempting to find the answers to these questions during the past few years.

Dr. W. C. COCKBURN (London) described the organization of the M.R.C. trials which were being carried out in eight different areas throughout the country. Only infants between the ages of 6 and 18 months, now totalling some 16,000, had been accepted, and every effort had been made to keep the vaccinated and control groups strictly comparable. Analysis of data on age, sex, size of family, feeding history, and previous infections other than pertussis showed that the two groups were remarkably alike. Workers engaged in the trials did not know which children had received the pertussis vaccine and which the control material. There was a very careful follow-up period of at least two years, with laboratory confirmation of suspicious cases.

Dr. D. G. EVANS (Manchester) pointed out that the antigenic structure of *H. pertussis* was complex. At least four antigens had been detected in phase I strains—agglutinogen, toxin, haemagglutinin, and soluble capsular substance. The importance of any one of these antigens in prophylaxis was not yet clear, and their protective value could be determined only by clinical trial. It was possible, however, from laboratory experiments to obtain some evidence of the relative importance of different antigens. Mice, which could be infected either intranasally or intracerebrally with *H. pertussis*, were being used to investigate the prophylactic effect of different antigens and their respective antibodies. Such investigations might reveal the effective immunizing antigen, or antigens, and allow the production of vaccines of more certain prophylactic potency than

was possible at present. They might also lead to the use of a purified bacterial fraction instead of the whole bacterial body.

In the general discussion, Dr. B. W. LACEY (London) said he had been using pernasal and postnasal swabs for the diagnosis of pertussis in children with suspicious coughs. From some 450 children he had isolated *H. pertussis* in over 100 cases and *H. parapertussis* in 14 cases. In four of the latter group *H. pertussis* was also present. He described the distinctive features of *H. parapertussis*, which could be isolated selectively by incorporating 5 units of streptomycin and 1 unit of penicillin per ml. of Bordet-Gengou medium. The organism was associated with a rather mild infection, usually occurring in small family groups.

Dr. H. SUGARÉ (Leeds), speaking as a general practitioner, stressed the urgent need for an effective prophylactic against this serious and debilitating disease. Dr. J. UNGAR (London) said that he had found 48-hour cultures most virulent for mice, but could not demonstrate a close correlation between mouse virulence and the haemagglutinating fraction of the organism.

In summing up, Professor CRUICKSHANK hoped that practitioners would soon be using the pernasal swab for the diagnosis of suspicious coughs in the same way as they used the throat swab for the differential diagnosis of sore throat.

Care and Treatment of Laboratory Animals

Dr. JEAN VINTER (London), technical secretary to the Universities Federation for Animal Welfare (UFAW), said that the welfare of laboratory animals depended on the good will of the experimenter and his technical assistants, on a sound knowledge of animal husbandry, and on the control imposed by law, in that order of importance. Legal control limited experimentation on animals to *bona fide* scientific purposes, required licensing of the experimenter and the premises, and instituted unannounced inspection by Home Office inspectors. There was legal control of animal experimentation in very few other countries and, as the British law was cumbersome, she had thought of drafting a model law with the inspector as a friendly adviser on animal care and outlining the conditions under which research work on animals was best performed.

Such a model law might be based on a schedule of degrees of suffering rather than on favoured animals, since there was no evidence that rats or mice suffered pain any less than cats or dogs. There should also be a qualified veterinary adviser attached to the Home Office inspectorate, who could be consulted about the breeding and supply of laboratory animals, their care and maintenance, the choice of anaesthesia, etc. It was worth while studying the *UFAW Handbook* and keeping in mind such points as these : needles should be really sharp ; animals should have adequate space for exercise ; most animals in captivity required water to drink ; the best methods of anaesthesia should be known and practised ; and there should be the same care and forethought given to the planning of animal as to the planning of test-tube experiments. It would be useful, too, if all medical students were required to attend one lecture on the functions and scope of animal experimentation in medical research.

Professor ALASTAIR N. WORDEN, editor of the *UFAW Handbook*, commented on the quickening of interest and recent progress in the use of small animals for biological research. He mentioned particularly the setting up of the Laboratory Animals Bureau by the Medical Research Council ; studies on animal breeding and feeding at the National Institute for Medical Research, Hampstead ; and the publication of the *UFAW Handbook*. He stressed the need for better standards in the training and status of animal attendants ; the use of suitable food-containers to avoid wastage ; the need for supplies of homogeneous stock ; and the steps to be taken to avoid natural parasitic, bacterial, and virus infections among laboratory animals.

Professor R. J. V. PULVERTAFT felt that strong representations should be made to hospital management committees and other lay hospital bodies on the requirements for the proper housing and care of laboratory animals. Professor G. P. CROWDEN (London) said that more attention should be given to environmental conditions—heating, lighting, ventilation, and relative humidity—in animal houses.

SECTION OF RADIOLOGY

Tuesday, June 28

Scope and Limitations of Radiotherapy

Dr. J. S. FULTON (Liverpool) said that the action of radiation in the *x* and gamma ranges was fundamentally damaging. The effect of the dosage depended upon the volume of tissue irradiated. This concept enabled the effect of small doses in inflammatory conditions or of large doses in malignant disease to be assessed. A more favourable response was usually obtained when the treatment was in a relatively vascular area ; it was less good when the vascular supply was temporarily impaired. Patients with carcinoma of the tongue who had syphilis or had had it previously, for example, invariably responded less favourably. Carcinoma of the lung, which appeared to be on the increase, offered a field in which radiotherapy was of real value, although it could rarely be regarded as other than palliative. The relief from pain and dyspnoea which radiation afforded was a genuine contribution to the treatment of the condition. Carcinoma of the oesophagus, again, was another valuable field for radiotherapy, and the same applied to radio-sensitive tumours of the nasal accessory sinuses.

There was a tendency to regard tumours of bone as hopeless, but this view was frequently unjustifiable, and he instanced cases in which good results had followed radiotherapy. In the treatment of non-malignant conditions he had obtained consistently good results in plantar verruca. The value of radiotherapy in ankylosing spondylitis and arthritic conditions was well established.

Dr. CHESTER WILLIAMS (Bradford) discussed treatment by radiotherapy in four anatomical sites. In the skin, radiotherapy had achieved its greatest success in the treatment of accessible tissues, but the more experienced the dermatologist the more conservative he was in its use. A dermatological colleague had come to the conclusion that it should not be used to treat lesions of the palm of the hand or the sole of the foot. Sufferers from pruritus ani needed urgent relief, which could be given in many cases by radiotherapy. Over 90% of rodent ulcers were treated successfully, but there were limitations in the treatment of epitheliomata—for example, radiotherapy was not successful in the treatment of epithelioma of the dorsum of the hand in the elderly. Lesions in the mouth, whether malignant or non-malignant, responded well to radiotherapy. In cancer of the breast he believed that simple mastectomy and radiotherapy was the treatment of choice. In cases of recurrent and metastatic cancer isolated nodules could be treated and would remain isolated for years, but multiple skin nodules presented an almost insoluble problem. Radiation could be repeated too often ; plantar warts should be treated once only. There were also long-term dangers in treating excessive hair growth.

In some general discussion Professor B. W. WINDEYER said that radiotherapy must be regarded as a dangerous method of treatment, not to be used when other simpler and less dangerous methods would be effective. With regard to the treatment of ankylosing spondylitis, if the radiation was given through the sacral joints sterilization was apt to follow, but he thought it was possible to apply the radiation tangentially through those joints in such a way as to avoid this sequel.

Dr. J. R. NUTTALL (Leeds) said that in cases of carcinoma of the prostate he had used a combined method of orchidectomy, stilboestrol, and radical *x*-ray therapy ; quite a number of patients were alive and well after four or five years. Dr. C. G. HITCHCOCK (Harrogate) said that sometimes children were seen with warts very widely distributed over the body ; if the main groups were treated the whole body was freed. Dr. FULTON said that this was a well-authenticated phenomenon. Warts were contagious, and by taking a careful history the mother wart could be located ; if it was treated radically all the warts would disappear.

A question was raised on the use of *x* rays in treating strawberry naevi. Dr. CHESTER WILLIAMS said that he had tried to persuade mothers who had children with this disfigurement to leave it, at least until the children had to go to school ; but if the naevi did not disappear spontaneously it was a very slow process. Dr. FULTON said that the worst possible thing was the application of carbon-dioxide snow.

SECTION OF SURGERY

Tuesday, June 28

Prostatic Obstruction

With the president, Mr. T. V. PEARCE (Harrogate), in the chair, Mr. H. HAMILTON STEWART (Bradford) opened the discussion by a consideration of 2,192 patients treated in hospital and private practice. The safest course for the general practitioner was to dispatch the patient suffering from acute prostatic retention to hospital. The dangers of attempting catheterization were trauma, infection, the effects of rapid decompression, and failed catheterization, but if instrumentation was performed these could be offset by a careful technique. An initial injection of 10 ml. of sterile water-soluble lubricant into the urethra was given. The catheter, its end clipped to lock the air in its lumen, was then introduced through a meatus controlled by compression of the glans. This procedure allowed a hydraulic column to advance ahead of the catheter and prevent damage to the mucosa. Catheterization should never be repeated. Suprapubic aspiration, the alternative to catheterization, carried the risk of damage to an intraperitoneal dome. "Silent retention" was easily overlooked if the bladder dome was intraperitoneal; to detect it, bimanual examination was invaluable, with ballottement of the bladder between a hand on the abdomen and a finger in the rectum. Diagnostic catheterization was dangerous, and unnecessary unless urethral stricture coexisted. In general, prostatectomy was desirable as soon as the diagnosis was established, unless coincident disease made the expectation of life short. Only if obstruction was slight and residual urine was small in amount might the patient be treated conservatively—and watchfully. Indwelling catheters required special care; the instrument should not be too large, and leakage of mucus around it should be encouraged by careful and repeated removal of the meatal crust of dried discharge. The presence of a congenital stricture of the urethra called for special care; tight meatal strictures called for meatotomy, higher strictures for transurethral prostatectomy by the perineal route.

It was a mistake to use one method of prostatectomy to the exclusion of all others. In 1,347 perurethral operations, performed with the use of the Thomson punch, the mortality had been 3.04% even though most of the bad-risk cases were included. If properly performed this procedure allowed as thorough a removal as any other and there was no greater risk of recurrence. Open operation, in one or two stages, and chiefly by the transvesical route, had been performed in 613 cases, with a mortality of 2.93%. The one-stage operation had been used in an increasing proportion, and in the last five years had been used in 70.9% of the patients treated by open operation, with virtually the same mortality as was obtained in the 16% of patients so treated in the previous five years. The main indications for the open operation were (1) the concurrence of prostatic obstruction with cancer, diverticulum, or stones in the bladder, or with congenital or acquired stricture of the urethra, and (2) large prostates weighing more than 70 g. Multiple resections were to be avoided except when the only alternative was a permanent suprapubic tube. For carcinoma of the prostate large doses of oestrogen were indicated, obstruction being relieved by transurethral wedge-resection.

Mr. WILSON HEY (Manchester) concluded from the fine results recorded in the previous paper that cases of enlarged prostate should go to the specialist and not to the general surgeon. In the preparation for operation penicillin and, if possible, streptomycin were preferable to sulphonamides. Particularly, these drugs must be given before and after catheterization. If catheterization must be performed (and suprapubic puncture was preferable) then prostatectomy should follow in 48 hours. Malignancy after removal of an apparently benign prostate was a special danger now that the survival period after prostatectomy was increasing. Subcapsular orchidectomy followed by minimal doses of oestrogen was employed in combination with prostatectomy whenever cancer was suspected.

Mr. ASHTON MILLER (Bristol) argued in favour of the retropubic operation. He supported the previous speakers in their advocacy of early prostatectomy and, in acute retention, immediate prostatectomy. Where immediate prostatectomy was inadvisable, low suprapubic puncture was preferred to catheterization. Diagnostic catheterization of patients not yet in acute retention was not now desirable. The desire to micturate after naturally emptying of the bladder was a better index of a high residual urine. Intravenous cystography immediately after natural micturition gave an even more precise measure of the residual urine. The transurethral operation was difficult, and in the hands of the inexpert dangerous, though its efficiency in expert hands was admitted. Transurethral resection was reserved for the small adenomatous or fibrous prostate. The only satisfactory method of distinguishing between adenomatous and fibrous obstruction was cystoscopy, or preferably cysto-urethroscopy. The retropubic operation gave, in his hands, better results than any other, though probably no one method should be used exclusively. Only in a few cases, particularly of small fibrous glands, was the operation difficult. Infection and secondary haemorrhage were particularly troublesome in patients with chronic retention, but even in these the retropubic technique was more satisfactory than any form of two-stage operation.

Mr. JOHN SWINNEY (Newcastle-upon-Tyne) attached particular importance to the character of the stream of urine observed when the patient micturated before him. Rectal examination, provided little information of the total size of the enlarged gland and must be supplemented by cysto-urethroscopy. Cystoscopy should be followed at once by operation in cases when it provided a clear diagnosis of obstruction. The amount of residual urine was considered an unreliable guide to the bladder condition; against it must be considered the degree of tone in vesical and sphincteric muscle.

Transurethral resection was limited to glands of less than 100 g. weight—the maximum amount of tissue which could be removed in an hour. Bulky upward enlargement lent itself to the transvesical operation, bulky lateral and posterior enlargements to the retropubic. The total mortality rate was 4 to 5% in any year. The lower rate (1–2%) reported in the United States could not be easily explained; the speaker, using the same technique in both countries had obtained a substantially lower mortality rate in America than he had subsequently obtained in England. Perhaps the explanation was that in the former country patients, more prostate-conscious, came to the surgeon earlier.

In the subsequent discussion introduced by Mr. IAN FRASER (Belfast), vice-president of the Section, Mr. THOMAS MOORE (Manchester) pointed out that the transurethral procedure, often advantageous as it might be, was a serious operation if adequately performed. In his experience the retropubic operation was of less magnitude and, on the whole, better sustained by the patient. Mr. R. MARCUS (Liverpool) urged that streptomycin be reserved for use against the rare pyelonephritis after operation; if given before operation streptomycin-resistance might occur.

Replying, Mr. HAMILTON STEWART emphasized the importance of meticulous haemostasis in preventing post-operative haemorrhage; serious haemorrhage could not be controlled by catheter lavage. In the detection of malignant disease a positive diagnosis by either clinician or pathologist should stand against a negative diagnosis by the other. In the treatment of cancer of the prostate, castration and oestrogen therapy were preferable in the first instance, to be followed by deep *x*-ray therapy if symptoms returned or if the histological pattern of the tumour changed, as it sometimes did. Mr. WILSON HEY, replying to questions, said he preferred the vertical incision when malignant disease was suspected, because of the greater access it afforded, and the transverse suprapubic incision in other cases. Haemostasis depended on accurate use of the endotherm apparatus. The transvesical approach seemed preferable to others because of the wide visual access which it afforded. In the treatment of suspected prostatic cancer wide resection of prostate and seminal vesicles was a prerequisite, even if it put the rectum to a little hazard, or if it entailed opening the peritoneum; carcinoma sometimes developed, after prostatectomy, in the seminal vesicles.

SECTION OF ANATOMY AND PHYSIOLOGY

Tuesday, June 28

Control of Activity in the Gastro-intestinal Tract

Professor R. A. GREGORY (Liverpool) gave an account of experimental work designed to determine the nature of the mechanisms controlling intestinal tone and motility after meals in relation to the passage of food along the intestine. Observations had been made on unanaesthetized dogs with two Thiry-Vella loops in the mid-part of the small intestine. Fluid was fed into the loop from a reservoir and the rate of passage of fluid and the associated intestinal contractions could be recorded; the method was more sensitive than those employing balloons in the lumen of the gut. It measured the resistance to the flow of liquid and the general nature of the motility elicited in the loop. A general diminution in tone was associated with a rapid flow and a decrease in rhythmic contractions. After a prolonged fast the loop was in a "basal" state on which there were superimposed some alternating periods of quiescence and activity. When a meal was given there were almost immediate changes with slowing of the flow and an increase in motility. The effect of a meal might last for several hours, though in diminishing degree.

Analysis showed that the response was nervous and was mediated through the vagus with two probable sites of origin, (*a*) cephalic reflex stimulation, and (*b*) distension of the stomach. If the animal was "sham-fed" the typical response occurred even though the food had not entered the stomach. Alternatively the response appeared if the stomach was distended by a balloon or if the mucosa was stimulated gently by a blunt instrument inserted through a fistula. The reaction did not occur if the loop was denervated, but was gradually restored as regeneration took place.

The effect of alterations in the chemical composition of the fluid perfusing the gut had also been studied. The addition of bile salts, protein digestion products, or hypertonic saline retarded or stopped the flow, and the contractions of the loop were increased so that the fluid tended to reflux to and fro between the loop and the reservoir. Increase in acidity of the fluid slowed the flow until some neutralization had been effected. It was thought that there were local reflex arcs in the wall of the intestine, because the response to chemical changes was abolished by applying a local analgesic to the mucosa.

Dr. J.-J. SPIRA (London) held that the peristaltic wave was the most important means of intestinal propulsion, and that there was no evidence of a physiological mechanism to produce retroperistalsis. The sphincters might operate to prevent retrograde movement of the intestinal contents.

Dr. J. N. HUNT (London) described work undertaken at Guy's Hospital on the rate of emptying of the stomach. Existing techniques for test meals did not allow a complete picture of the emptying pattern to be built up, but by giving serial test meals to an accustomed subject on successive days and withdrawing specimens after different periods it was possible to construct charts which would show, for any instant, the volume of the original meal remaining in the stomach, the volume of the gastric contents, and the rate at which the gastric contents were leaving by the pylorus. The meal, which was physiologically inert, contained pectin, sucrose, phenol red, and NaOH to adjust to *p*H 6.5. The amount of dye remaining in the stomach could be calculated, and therefore the rate at which the meal was passing through the pylorus.

The pattern of emptying had been found to be much more regular and fixed than had been expected. In 21 subjects the mean rate of emptying was 3% of the gastric contents per minute—the rate of emptying varying with the volume of the gastric contents, provided the stomach contained between 20 and 750 ml. of standard meal. About half the contents passed out every 22 minutes.

Dr. A. A. HARPER (Manchester) surveyed the development of knowledge about the regulation of gastric and pancreatic secretion. He had confirmed Mellanby's findings that secretin caused a copious flow of enzyme-free pancreatic juice and that stimulation of the vagus led to the appearance of a small volume of secretion rich in enzymes. Even when all nervous connexions had been cut the passage of a meal from the stomach was followed by a large secretion of pancreatic juice containing enzymes. Working with Professor Raper, he had isolated pancreozymin, a hormone which caused enzyme secretion. This action was not affected by atropine, and the findings had been extended to man.

The duodenal contents were drawn off by a tube, and the injection of secretin caused the formation of a large volume of enzyme-free fluid. If pancreozymin was injected when the fluid secretion had been established by secretin there was a slight increase in the rate of secretion, which then contained amylase, trypsin, and lipase. The preparations of pancreozymin were probably not completely pure, because contraction of the gall-bladder occurred, but they might make possible the development of more complete tests of pancreatic function in man.

Understanding of the regulation of gastric secretion had advanced similarly. Edkin's claim that a hormone, gastrin, which regulated gastric secretion could be extracted from the pyloric mucosa was opposed because of the discovery that histamine was a powerful stimulant of the oxyntic cells. But recently Komarov and others had extracted from the antral mucosa a protein-like, histamine-free substance which promoted the secretion of hydrochloric acid from the stomach. The search for a substance, analogous to pancreozymin, which would stimulate the secretion of pepsin had so far been unsuccessful.

Dr. R. E. DAVIES (Sheffield) dealt with the mechanism of secretion of gastric juice. "Pure" gastric juice was a mixture of the secretions from several types of cells. Recently, biochemical experiments on isolated gastric mucosa, using indicator dyes, had shown that the oxyntic cells were responsible for the secretion of hydrochloric acid at a concentration of 0.16 M, which corresponded to *p*H 1.4.

The acid was formed as such by the oxyntic cells and not in the form of a precursor. Using isolated gastric mucosal preparations, chiefly from amphibian stomach, it had been shown that the acid secretion depended on an ionic exchange. When the gastric mucosa secreted acid there was an uptake of carbon dioxide equivalent to the acid secreted. Hydrogen ions came ultimately from the water of the tissue fluid and blood and an equivalent amount of bicarbonate ions was passed into the blood in exchange for chloride ions; this explained the alkaline tide in urine after meals. The actively acid-secreting stomach required supplies of carbon dioxide from the arterial blood, and the rate of acid secretion could be so fast that the output of hydrogen ions might be much greater than the uptake of oxygen from the blood or the rate of production of carbon dioxide from metabolism in the stomach.

If in isolated gastric mucosa secretion was stimulated in the absence of external supplies of carbon dioxide, then ulcers and perforations might occur. Carbon dioxide prevented this, apparently by preventing the accumulation of alkali formed within the oxyntic cell concomitantly with the acid. Since many more hydrogen ions were formed than oxygen molecules used, most of the hydrogen ions must come initially from the water of the blood, and electrochemical work was needed to separate the positive and negative charges.

SECTION OF ORTHOPAEDICS

Tuesday, June 28

Fractures of Radius and Ulna

With the president, Mr. R. BROOMHEAD (Leeds), in the chair, Mr. E. MERVYN EVANS (Birmingham) opened a discussion on closed fractures of the shaft of the radius and ulna. He emphasized the virtues of non-operative treatment, basing his discussion on torsional derangements of the radius, which were insufficiently recognized. Failure to reduce them was the largest single element preventing an accurate position being obtained and kept. The best method of checking torsion was by comparative radiographs of the patient's opposite forearm in varying degrees of pronation and supination. Views of the upper end of the ulna and radius were taken of both limbs with a tube centred on the front of the forearm and tilted 20 degrees towards the elbow. On the fractured side the upper fragments were brought into equilibrium by the action of the

surrounding muscle, and it remained only to select the correct angle of lower forearm position by making a comparison with the shadow of the upper radial contours of the opposite forearm and then to correct length and angulation. Accurately reduced, the majority of these fractures remained stable, and retention in plaster was satisfactory. For oblique single fractures of the radius, or those also involving the distal end of the ulna, it was necessary to apply traction to the thumb for several weeks. In very few (even comminuted) fractures was it necessary to carry out open operation. Rules for the position in which to retain forearm fractures based upon their site did not hold. The higher the fracture was in the forearm, the more often did it appear that supination of the lower fragments was necessary, though the speaker's study of 50 cases showed that the torsion position was inconstant.

Mr. F. W. HOLDSWORTH (Sheffield) emphasized the need for open reduction and plating for those special types for which thumb traction had been advocated as well as for the majority of other fractures which, because of minor degrees of obliquity and comminution or of the great liability to soft-tissue interposition, were unstable or slow in uniting. Such a course enabled the case, within a day or two, to be treated as one almost of soft-tissue repair and without splintage. Such treatment was dependent upon perfect surgical technique, with avoidance of clumsy instruments and unnecessary soft-tissue damage.

Mr. I. LAWSON DICK (Bradford), in underlining Mr. Holdsworth's argument, mentioned the liability of the radius, after closed reduction, to angulate inwards, and that continued traction on the thumb or any other part of the hand brought its own problems of rehabilitation. Mr. H. H. LANGSTON (Winchester) pleaded for a critical assessment of the need for operation in every particular case, and Mr. N. ROSS SMITH (Bournemouth), while favouring closed methods, thought that some cases were better treated by the simple interlocking of fragments through small incisions. Mr. G. A. POLLOCK (Edinburgh) believed a middle course was right in most cases, for good function could be obtained in spite of interior defects of anatomical reduction.

Dr. F. W. HANFORD (Northern Rhodesia) felt that the advocates of open reduction had underestimated the risks of infection. Mr. H. H. HILL (Western Australia) felt that there were risks in the early movement of plated bones, and found function just as good in those cases in which closed reduction was maintained.

The discussion was concluded by Mr. MERVYN EVANS, who, while agreeing that open operation was rarely needed, thought that the decision should not be prejudged—a delay of two weeks was not harmful. Soft-tissue interposition, comminution, and minor obliquity did not in themselves provide reasons for open operation of any kind.

Lesions of Thoracic Inlet

A discussion on upper-limb pain due to lesions of the thoracic inlet was opened by Professor LAMBERT ROGERS (Cardiff), who described the anatomical relations of the bony circle that comprised the inlet, and the structures, normal and abnormal, which might cause compression, angulation, or chafing of the subclavian artery or the branches of the brachial plexus as they passed over the aperture. Man's assumption of the erect posture, and the dependent position of the limb, had favoured the angulation of these structures, whereas in the lower limb such lesions were unknown, because the evolutionary process had had a reverse effect. There were two types of case. The commoner, of neural origin, was due to the lowest trunk of the brachial plexus being stretched over and compressed against a cervical rib element of bony or fibrous nature, an abnormal first rib, the medial tendinous fibres of the scalenus medius muscle, or an abnormal scalene muscle. Professor Lambert Rogers felt that too much emphasis had been laid upon the scalenus anterior muscle—the medius was often more important. The less common (8 out of 35 operations in his series) type of case was vascular in origin and due to compression of the subclavian artery between the clavicle and a cervical or abnormal first rib. In cases of the neural type pain was of tingling character and mainly of ulnar distribution. In vascular cases the aching pain of ischaemia was associated with peripheral colour changes.

He condemned scalenus anterior tenotomy alone. Though necessary as a step in operative exposure, the exposure must be carried through to the actual site of compression, which should be dealt with adequately. The chief lesions from which these thoracic inlet disturbances must be distinguished were writer's cramp (hysterical) and cervical intervertebral disk protrusions. The latter were radicular in site and more cephalic in distribution, generally affecting the 5th, 6th, or 7th cervical segments. A useful test which also was of therapeutic value was splintage of the upper limb.

Mr. A. C. BINGOLD (Leeds) thought that the lesions under discussion should be termed the thoracic inlet syndrome, and he would add two others: Pancoast's syndrome, in which tumours in this space cause pain in the shoulder and inner side of the arm, intrinsic-muscle atrophy. Horner's syndrome, and, radiologically, an apical pulmonary shadow with more or less rib destruction. The other type was that shown by E. S. R. Hughes to be due to compression of the subclavian vein by a pre-venous phrenic nerve. A possible serious complication of compression of the subclavian artery between a cervical rib and the clavicle was aneurysm, from which, if thrombosis occurred, retrograde spread might cause embolism through the carotid artery and a contralateral hemiplegia. Many cases of thoracic inlet syndrome were in grossly overworked housewives; the usual treatment by rest, etc., was economically impossible. Much relief could be obtained by training such patients in scalene muscle relaxation and by galvanic treatment of the neck muscles—a cure usually being effected in six to eight weeks.

Mr. ROSS SMITH mentioned that there were other lesions of the cervical disk besides protrusion which caused symptoms, particularly in the elderly. These degenerative changes should be borne in mind in the differential diagnosis. Mr. HILL believed that the radiological evidence of protruded cervical disks was unreliable.

SECTION OF RHEUMATOLOGY

Tuesday, June 28

Rheumatoid Arthritis in the Young

Dr. BERNARD SCHLESINGER (London) said that a wider view of the clinical picture of rheumatoid arthritis with less emphasis on the locomotor system was more likely to cast fresh light on its aetiology. Study of the disease in its most acute form and from the onset in the young might be profitable. He had chosen for study 20 patients, all of whom suffered from considerable fever and the general acute manifestations first described by Still. The onset was usually abrupt, and began with arthralgia, followed by migratory arthritis, an urticarial or maculo-papular rash, adenitis, and sometimes splenomegaly. Fever was usually high and continuous at first, but later occurred in irregular periodic bursts. Complete recovery with no residual arthritis was the final result in four cases; 10 developed typical rheumatoid arthritis, two were still in the acute stage, and four patients died.

Apart from a slight degree of anaemia, the most significant change in the blood picture was a marked leucocytosis at the beginning of the disease, which soon dropped to normal. Leucopenia followed in a few cases, sometimes terminating in agranulocytosis. Leukaemia was the final result in two cases. Occasional complications were pericarditis, pneumonitis with pleurisy, and jaundice; rarely, cirrhosis and encephalitis were observed.

In many ways these 20 cases resembled some of the rarer arthritic disorders such as intermittent hydrarthrosis, angioneural arthrosis (Solis Cohen), palindromic rheumatism (Hench and Rosenberg), and Felty's syndrome. Comparison with lupus erythematosus and polyarteritis nodosa might help to elucidate the cause, and some allergic basis was suggested. The form of the antigen was probably bacterial, the initial leucocytosis being a sign of the primary invasion. The occasional leucopenia developing later with agranulocytosis and, rarer still, leukaemia might be due to repeated anaphylactic assaults on the bone marrow. The character of the fever, the clinical course, the regions involved, and the type of lesion in Still's disease all gave support to this theory, but many points remained obscure. No

one had yet discovered the nature of the antigen, explained how it produced a prolonged disease with progressive inflammatory lesions, or what predisposed certain individuals and allowed others to escape. In conclusion Dr. Schlesinger considered that "cortisone" might one day be used in the treatment of this disease, and in this connexion mentioned one of his patients who became hirsute when the illness itself had subsided.

Professor W. S. McR. CRAIG (Leeds) commented on the return to thinking in terms of endocrinology. The sex incidence in infective arthritis was of some interest in this connexion. In the adult it was most common in females at about 20 years and 45 years of age, the latter often coinciding with the climacteric. In the child infective arthritis came at the time of most active growth—namely, about the age of 5 years. He looked for some common factor such as infection, and pointed out that at the age of 5 years infection was usually acute, not chronic, and that foci of infection were more commonly found at that age.

He urged the need for research on a broad national basis, because of the comparative rarity of the disease and lack of clinical material. He considered that parallel studies should be carried out, and in this way it might be possible to check up on such factors as climate, soil, etc. He put in an earnest plea for treatment of the child in the home with home helps and visiting teachers rather than in residential special schools or convalescent hospitals. Professor Craig considered that more money should be spent on this type of case rather than as at present on patients with a less favourable prognosis. He thought that a generous diet was an important part of the treatment.

Dr. DONALD WILSON (Bognor Regis) commented on the rarity of the disease, but thought it was possible that this was exaggerated and that it was at times confused with other diseases. In treatment he emphasized that to avoid deformity orthopaedic measures were needed at an early stage. He gave an account of a child of 11 years he had seen suffering from this disease, treated with ACTH (adrenocorticotropic hormone) in a hospital in Philadelphia. There was alleviation of symptoms after three hours, and in eight hours all symptoms had disappeared. The child was running about and the E.S.R. was normal. The reversal of symptoms lasted eight days, and then the disease returned. Dr. Wilson thought that it was difficult to reconcile primary infection in the aetiology of Still's disease if cortisone or ACTH could cause the disappearance of all signs and symptoms in such a short space of time.

Dr. GEORGE D. KERSLEY (Bath) commented on shock as the trigger mechanism in precipitating the onset of Still's disease, and considered this another link in the theory of excessive strain on the adrenal cortex and anterior pituitary. He said also that the onset of the disease during the period of most rapid growth might point to changes in the anterior pituitary. He wondered if the effect of cortisone and ACTH on the blood picture, in that it caused a fall in lymphocytes and eosinophils, might have some bearing on the leucopenia and occasional agranulocytosis observed by Dr. Schlesinger in his series of cases.

In reply Dr. SCHLESINGER said that he did not regard diet as an important factor in Still's disease. Most of the children in his series came from well-to-do homes. He pointed out that, in a disease where orthopaedic and other measures were essential, admission to hospital was a necessity in the acute and subacute phases of the disease. He had not found gold therapy of any value, nor had he had good results with transfusions using blood from pregnant women, or with induced infective hepatitis.

Clinical Demonstration

Sir HENRY COHEN (Liverpool) demonstrated three cases from the Royal Bath Hospital of arthritis occurring in girls in the first decade of life: a child aged 5, whose illness had started at the age of 15 months; one aged 15, who gave a seven-years history; and a woman of 22 years, whose arthritis began at the age of 3 and had left her severely crippled.

Sir Henry stated that these three cases illustrated a lesson which still needed emphasis—that we were too apt to isolate as separate diseases under the labels of Still's disease, Felty's syndrome, and the like, a number of pathological states whose common feature was arthritis, implying that these might be the expression of differing primary essential causative factors. Experience showed that cases of so-called rheumatoid arthritis were part of a heterogeneous group of arthritides of unknown and probably of variable and dissimilar causation. Another point which it seemed timely to stress in view of the striking effects of cortisone in securing reversibility of the arthritic state was that the arthritic changes which in the early stages were reversible became in later stages irreversible. Cortisone would not replace destroyed articular cartilage or reduce subluxated joints. Early diagnosis and treatment would still be essential. Finally, Sir Henry emphasized the relation of peripheral vasospasm to the problem of arthritis and claimed that it was possible to recognize this as a major factor in the genesis of arthritis in some patients, a factor which possibly rendered the joints less resistant to the specific noxious agent.

Sir Henry demonstrated also a classical case of gout and a doubtful case of gout in a man of 29. Since the latter patient had an atypical history, a normal blood uric acid, and had not responded to anti-gout therapy, Sir Henry doubted the correctness of the diagnosis. The absence of tophi at his age was not of importance in excluding gout.

Dr. LESLIE C. HILL (Bath), in discussing these cases, agreed that the giving of individual titles to relatively rare diseases had no clinical value. He commented on the significance of peripheral vasomotor spasm as exhibited in the second case, and said that the incidence of this condition in patients with rheumatoid arthritis was higher than in the normal person. It might well be "the soil" in which this disease could develop. Discussing the third case, he indicated the danger of calling this a self-limiting disease, and emphasized the necessity for early orthopaedic measures.

Dr. SCHLESINGER said that the marked effusion into the joints in the second child was in his opinion a very good sign, as it made adhesions less likely; in his experience it was the only type of joint which defeated all orthopaedic measures.

SECTION OF TROPICAL MEDICINE

Tuesday, June 28

Tropical Diseases as Aftermath of War

Air Vice-Marshal T. C. ST. C. MORTON said that the most important and the commonest tropical disease among ex-Service men was amoebiasis. The usual clinical syndrome was one of irregular bowel action with discomfort over the caecum, and the hepatic and splenic flexures relieved by the passage of flatus. The diagnosis was made by finding *E. histolytica* or cysts in the stool. The specimen should be sent, by post if necessary, to a centre which had special experience in this work. Sigmoidoscopy should also be performed. Amoebic granuloma of the rectum might simulate neoplasm, and discomfort in the right iliac fossa appendicitis. A correct diagnosis was important, because surgical intervention was contra-indicated. Liver abscess or hepatitis might also occur. After they had been treated it was important to sterilize the gut.

The treatment of amoebiasis of the intestine was by means of emetine bismuth iodide, reinforced by "diodoquin." If there was ulceration, and in chronic relapsing cases, penicillin and sulphasuxidine proved valuable in removing secondary bacterial infection and allowing the ulcers to heal; emetine was then more effective.

Colitis following bacillary dysentery was less common. It was treated by rest in bed, high protein diet, sulphasuxidine, and penicillin. Kala-azar might be found, especially in men returning from Bengal; it was often mistaken for undulant fever. Repeated marrow puncture might be necessary to establish the diagnosis. Treatment was by pentamidine.

Enteric fevers were particularly common among those stationed in the Canal Zone in Egypt. There was little risk of frank cases acting as carriers in this country, because of the careful examination before discharge from hospital, but mild atypical cases in inoculated persons might escape detection at the time.

Dr. A. R. D. ADAMS (Liverpool) agreed that amoebiasis was important and required thorough treatment. He relied mainly on emetine bismuth iodide given as enteric-coated pills. Diodoquin had proved disappointing. Chiniofon, given as a retention enema, had been valuable. Anyone who was found to be carrying cysts of *E. histolytica* should be treated, since symptomless infections might ultimately end in acute amoebic dysentery even after lying dormant for 23 years.

Amoebiasis was world-wide and flourished wherever sanitation was bad. He had found a family in this country, living under squalid conditions, several members of which suffered from acute dysentery. Stools from 100 women had been collected in a general hospital and *E. histolytica* had been found in five cases. These five women had not been abroad and none had suffered from dysentery. The true rate of infection was probably higher than was suggested by this particular investigation.

Dr. J. P. CAPLAN (London) described his experience in treating chronic intestinal amoebiasis at Queen Mary's Hospital at Roehampton. Emetine used to be the foundation of treatment, but sometimes it proved disappointing. This might perhaps be due to a changed method of production; much of the present material was prepared by a synthetic methylation of cephaëline. Failure might also be due to concomitant infection with pyogenic bacteria; this should be treated by penicillin and sulphonamides. He now restricted the use of emetine to the treatment of complications of amoebiasis, such as liver abscess. His standard course was based on diiodohydroxyquinoline ("diodoquin") 0.8 g. three times daily for ten days. This was reinforced by quinoxyl enemata, although these rarely reached the caecum. Dr. Caplan also discussed the treatment of relapsing benign tertian malaria in ex-Service men. Radical cure was best achieved by a combined course of quinine and pentaquine given for ten days in hospital.

Sir GORDON COVELL (London) discussed the diagnosis and treatment of malignant tertian malaria. For prophylaxis he recommended proguanil (paludrine) or alternatively chloroquin. Quinine might cause blackwater fever in exceptional cases, and mepacrine psychosis; it also stained the face yellow. Chloroquin also might on rare occasions have toxic effects. He therefore used proguanil, but reinforced it with 900 mg. of mepacrine on the first day to reduce the fever more rapidly and to diminish the possibility of subsequent relapse.

Loaiasis

Professor G. J. STEFANOPOULO (Pasteur Institute, Paris) spoke of loaiasis, which was common among Europeans working in French Equatorial Africa. Besides the well-known Calabar swellings there were other symptoms due to sensitization which might resemble acute rheumatism, synovitis, lymphangitis, Hodgkin's disease, or tropical eosinophilia. Later the patients became desensitized and most of the symptoms subsided, but pruritus and eruptions might occur. Geographical factors had to be borne in mind in making the diagnosis. Leucocytosis and eosinophilia would be found, and there were microfilariae in the blood in 40% of cases. Intradermal and complement-fixation tests were valuable, *Litomosoides* from cotton-rats being used as antigen.

Previously, specific treatment was unsuccessful, but "hetrazan," which was given by mouth, had a marked effect. Microfilariae disappeared from the blood in 48 hours. At first all the allergic symptoms reappeared or were increased—especially oedema, pruritus, and rashes, which might be papulovesicular or urticarial. After two days, however, these symptoms subsided. Relapse was common. He gave 400 mg. a day for 10 days and repeated this course several times at monthly intervals. He was investigating the possibility of using hetrazan prophylactically to protect French engineers who visited West Africa for limited periods.

Dr. F. HAWKING (National Institute for Medical Research, London) spoke of the valuable work carried out by Dr. D. M. Blair and Mr. Alves on schistosomiasis in Southern Rhodesia. He mentioned the new compound "miracil," or "nilodin," which could be given by mouth and cured infections with *S. haematobium*. He also described the work of Col. W. Laurie and himself on hetrazan in the treatment of filariasis due to *W. bancrofti*. The action of hetrazan on adult worms was doubtful, but it was very effective in destroying microfilariae; apparently it acted as an opsonin. It would probably be useful for the mass treatment of whole villages infected with *W. bancrofti*, so as to prevent further transmission of the disease.

Professor H. E. SHORTT showed lantern slides depicting his now historic discovery of the exo-erythrocytic cycle of the malaria parasite in the liver, a discovery which he and his colleagues described in the *Journal* of Jan. 31, 1948 (p. 192), March 20, 1948 (p. 547), and June 26, 1948 (p. 1225). Dr. H. STEINITZ (Tel-Aviv, Palestine) discussed a new syndrome, "eosinophilic erythroedema," which had appeared in Palestine during the last seven years. Its cause was still unknown, but all the patients gave a positive response to filarial antigen.

Dr. G. W. M. FINDLAY (London), president of the Section, spoke briefly on aureomycin.

SECTIONS OF MEDICINE AND SURGERY

Wednesday, June 29

Treatment of Peptic Ulcer

With Professor R. E. TUNBRIDGE (Leeds), president of the Section of Medicine, in the chair, Sir HENRY COHEN (Liverpool), opening the discussion, characterized peptic ulceration as the most important social and economic medical problem after the group of rheumatic diseases. In this country 1½ million persons were computed to suffer or to have suffered from peptic ulcer, and one-half of the males between the ages of 45 and 54 in the County of London. Peptic ulcers had in common a restriction of site to areas with which acid juice came in contact. If the proteolytic ferments and acids were subjected to an increase in their strength or in the duration of their action, an ulcer might be expected to follow, and a reduction in the resisting power of the mucosa exposed to them would have a similar effect. Local vascular or inflammatory disturbance, for example, might lead to a lowered resistance of a mucosal area and render it susceptible to the ferments. Spiced foods might effect a local irritation of the oxyntic cells, but in general such a local cause was unimportant; they must usually seek a more distant and usually nervous cause. Anxiety or hypothalamic disturbance might produce an excessive secretion of a juice unusually rich in acid. In addition to the direct neural mechanism there was a humoral mechanism, perhaps also subject to vagal influences, and dependent on the secretion by antral cells of a hormone called gastrin, which stimulated acid production. The gastrin-secreting cells might be stimulated excessively by local irritative or inflammatory processes, by disturbances in neural control, and perhaps by regurgitating bile.

Treatment must aim at diminishing acid pepsin secretion and increasing mucosal resistance. (1) The neural secretion might be attacked (*a*) at a mental level by adjustment of the individual to his environment and by the administration of sedatives, particularly of the barbiturate group, or (*b*) at a peripheral level by atropine or vagotomy. (2) Hormonal secretion had been attacked, not very successfully, by Ivy's enterogastrone, an extract of intestinal mucosa, and by the administration of extract of pregnant mare's urine. Partial gastrectomy aimed at the same effect. (3) Attempts might be made to buffer acids by the frequent administration of food, to neutralize them by alkalis, to effect their absorption by certain synthetic resins, to dilute them by water, or, surgically, to dilute and neutralize them by allowing intestinal juice to enter the stomach. (4) Gastrectomy, increasingly radical, had been employed, apparently on the general principle that without an ulcer-bearing area there could not be an ulcer.

Of the complications of peptic ulcer, perforation and stenosis required surgical treatment, and haemorrhage was increasingly treated by the surgeon too. Ulcers must be regarded as mere incidents in the life of the subject of the ulcer diathesis, and treatment must be directed to the patient as a whole rather than to his gastric mucosa alone.

Dr. C. N. PULVERTAFT (York) read the paper by the late Mr. A. HEDLEY VISICK—almost completed before his death. The two Sections had stood silent in tribute to his memory for a minute when the meeting opened. In selecting a scheme of treatment for an actual patient, the knowledge of the general practitioner, who alone was familiar with that patient as a whole man, was of paramount importance. Treatment would vary too from district to district, the family doctor being guided in his choice by the facilities for particular types of treatment in his own area. Patients with a long history of the disorder, previous perforation, gastro-jejunostomy already performed, and persistent pain usually required surgery. The patient's emotional constitution must be considered, and his economic situation. The local pathological nature of the ulcer, the scarring or stenosis it may have produced, and its deep penetration were of importance too.

The first method—ambulatory treatment at home—must be carried out by the family doctor, with repeated follow-up by institutional methods. Men under the age of 30 could be treated with high efficiency and complete safety by gastrectomy. The indications for medical treatment were (1) economic unsuitability for surgery, (2) economic suitability for prolonged inactivity under medical care, (3) absence of stenosis, (4) short history, and (5) a pronounced anxiety state. Repeated haemorrhage or perforation and the suspicion of malignancy were absolute indications whatever were the attendant circumstances.

Of surgical methods, gastro-jejunostomy was a safe operation for patients over 50 with stenosing duodenal lesions. Vagotomy had not yet been finally assessed. Gastrectomy aimed at producing complete and permanent achlorhydria. To achieve this effect the gastrectomy should leave a remnant of stomach measuring 5 in. by 2 in. (12.7 by 5.1 cm.), though when performed for jejunal ulceration the remnant should measure only 1 by 1.5 in. (2.5 by 3.8 cm.), and the whole greater curvature should be mobilized, with division of all vasa brevia. The operation must be regarded as only an incident in treatment, and dietetic and sociological matters must be adjusted after it, though a full diet, alcohol, and smoking were usually permissible a week after operation.

Mr. A. DAVIS BEATTIE (Leicester) considered gastrectomy to be the only successful treatment for large or complicated peptic ulcer, but it seemed an unaesthetic and unnecessarily drastic procedure to carry out in cases of duodenal ulceration, and its results showed a smaller proportion of full economic successes than was generally realized. Vagotomy seemed a more physiological operation. Its rationale was based on the reduction of gastric acidity, particularly of the night secretion, and the relief of muscle spasm which followed it. Experience of 200 cases of vagotomy suggested that the operation was particularly suited to (1) uncomplicated duodenal and pyloric ulcers, (2) recurrent or jejunal ulcers after gastrectomy, and (3) small early ulcers of the lesser curvature, especially towards its upper end. The transabdominal approach was preferred to the transthoracic, since it permitted determination of the extent and nature of the ulcerative process.

Vagotomy was followed by an immediate loss of pain. A temporary ileus of stomach and small bowel lasted 24 to 48 hours, to be followed by a gradual increase in intestinal motility during the succeeding 12 to 18 months, and consequent relief of any previous tendency to constipation. Temporary post-vagotomy cardiospasm always resolved spontaneously after 2-3 weeks. Pylorospasm was the only cause of persistent post-operative symptoms and was responsible for nearly all failures. Retention symptoms were present in some degree in 65% of cases, were objectionable in about half of these, and were incapacitating in about 15%.

Apparent recurrence of ulcer symptoms seemed always to be due either to incomplete neurectomy or to retention; in no case could it be proved to be due to persistent or recurrent ulcer. The frequency of retention symptoms had led him in the last 100 operations to combine vagotomy with pyloroplasty or gastro-jejunostomy, and a certain proportion of the first 100 patients treated had subsequently required one or other of these additional procedures. Vagotomy, supplemented by pyloroplasty (preferably) or gastro-jejunostomy, afforded complete relief from all dyspeptic symptoms, improvement in psychological outlook, and the ability to return to full work six weeks after operation.

Dr. RICHARD DOLL (London) discussed the sociological aspects of peptic ulceration. In the latter half of the last century 50% of perforations were in women under 25 years of age, but since 1920 90% had been in men. A similar change had overtaken the incidence of haematemesis. It thus seemed reasonable to deduce that sociological influences were at work. Geographical differences in the incidence of peptic ulceration supported this deduction. Differences in the social scale, too, affected ulcer incidence; deaths from gastric, but not duodenal, ulcer were more numerous relatively among the poor than among the wealthy. An investigation by personal interview of 5,950 ulcer patients, 80% of whom had had a positive radiological, gastroscopic, or operative diagnosis, had been conducted by the speaker and Dr. Avery Jones. The standardized morbidity ratios showed that the incidence of ulcer was highest in doctors. The incidence was average in bus and trolley drivers, lower than average in agricultural workers. Sedentary workers had a low incidence too, not statistically very convincing, but perhaps rendered less dramatic because some ulcer patients had been transferred to clerical work as part of the treatment of dyspepsia. There was no difference in ulcer incidence between men on regular hours and men on shifts, between those who had regular and those who had irregular meals, but perhaps a low incidence in the latter group was obscured by ulcer patients having moved, under advice, from the latter group to the former.

There had been a rise in the incidence of ulcer during the recent war due to industrial fatigue rather than to danger, for the incidence of perforation in Glasgow reached its peak before the air attack on that city (Illingworth). Anxiety at work was of high importance, but only in cases of duodenal ulcer, not gastric. Food processing and smoking were under investigation now, and preliminary results seemed to show no difference between the incidence of ulcer in smokers and in non-smokers. The changed sociological relations between children and parents now as compared with the last century might be of importance in the increase in ulcer-incidence, and Halliday had blamed very tentatively an unhappy background during the first five years of life for the subsequent development of ulcer. One interesting effect of the survey was that it revealed gastrectomized patients happily and successfully performing all kinds of work, even the heaviest manual labour.

Dr. CORNET (Paris) said that ulcers of the anterior wall of the stomach were difficult to detect and follow by radiological methods, and their presence could sometimes be proved only by gastroscopy. Even gastroscopy had its own difficulties, the great oedema around these ulcers sometimes simulating malignant disease.

Dr. J.-J. SPIRA (London) said that hydrochloric acid played no part in acute ulceration, but no chronic ulcer formed in the absence of acid. Chronic ulcers might be classified according to their situation on a mucosa which normally secreted alkali (oesophagus, jejunum, Meckel's diverticulum) or acid (stomach, first part of duodenum). Acid, pepsin, or an acid–pepsin mixture alone could not produce ulcer. A second factor was also required, and that was the presence of bile in the stomach.

Dr. J. LIPETZ (Edinburgh) recommended the greater use of the Gregersen slide test for the detection of occult blood in the stool as a convenient and reliable method for the general practitioner to select those of his dyspeptic patients who suffered from gastro-duodenal ulceration. Dr. D. R. BELLETTY (Assam) had found a high incidence of peptic ulceration in his coolie patients, who were meat-eaters when they could get meat, fairly heavy drinkers when they could get drink, and heavy smokers when they could get tobacco. Dr. MONTGOMERY (Montreal) reported that in North America they were coming to the opinion that the late results of vagotomy did not entirely fulfil the early promise of that operation. Dr. C. M. STEVENSON (Cambridge) blamed the cigarette but not the pipe for ulcer-production. Dr. D. A. JENNINGS (London) had found that only three of over 300 patients on ambulatory out-patient treatment had continued to have pain. The real difficulty was to get the patient off milk and back to work. The principles of treatment were primarily psycho-analytic—the patients must

be taught to relax and to abandon, not merely to reduce, their smoking. Controlled American experiments with nicotine-free cigarettes clearly showed the importance of nicotine in ulcer-production.

SECTIONS OF OBSTETRICS AND GYNAECOLOGY AND RADIOLOGY

Wednesday, June 29

Radiography and Disproportion

Mr. ARNOLD WALKER (London), vice-president of the Section of Obstetrics and Gynaecology, called upon Professor Chassar Moir (Oxford) to open the discussion. Professor CHASSAR MOIR said he believed that distrust of pelvimetry had arisen because radiologists as a class had little first-hand knowledge of obstetrics and often failed to appreciate the intricacies of childbirth. Similarly, the obstetrician seldom appreciated the technical difficulties of *x*-ray methods. He pleaded for close co-operation between obstetrician and radiologist if progress was to be made. Disproportion was the most important of the causes of dystocia, and it was right that it should have special consideration, though measurements of it took no account of such important features as the force and frequency of the uterine contractions, the adaptation of soft tissues, or the moulding of the baby's head. Least of all did radiology measure the patient's psychology.

Adequate pelvic examination necessitated much more than recording the size of the conjugata vera, important as that time-honoured measurement was. Radiological measurement had to include examination of the pelvis in more than one projection, and shape as well as pelvic size was important. The occipito-posterior position of the head, for example, was often associated with a pelvis greater in its antero-posterior than in its transverse measurements. Disproportion could be assessed by various methods. There was the "impressionistic" method, seen at its best in the stereographic technique used by Caldwell and Moloy. This was, however, a time-consuming method. Ball and Marchbanks, of New York, had developed a method of computing head volume and comparing it with pelvic capacity, but this suffered because the technical difficulties were formidable. Nicholson, of Moreton-in-Marsh, had related the pelvic area at brim level and at ischial-spine level to the progress of labour, but he had paid little attention to the size of the foetal head and he had not considered sufficiently the variation of prognosis that derived from variation in pelvic shape. However, Nicholson was to be congratulated on focusing attention on the need for accurate measurement; that work had been done in a busy general practice in a rural district. Roland Williams and the speaker had developed methods by which pelvic outline could be reduced to true size and shape and the charts used for estimating the "fit" of the foetal head. A strict analysis of 193 assessable cases of clinically suspected pelvic abnormality had been carried out, with the following results: When easy labour was indicated by the graphs, the labour in 72% of cases was short, spontaneous, and uneventful; when difficult delivery was indicated, labour was prolonged or required operative assistance in 86% of cases. The accuracy was even higher when dystocia was indicated by contraction in the brim graph, as distinct from the cavity and outlet graphs.

Dr. J. BLAIR HARTLEY (Manchester) said that often the radiologist was reporting to more than one group of obstetricians, and he pleaded for simplification and standardization of methods so far as practicable. No routine examination should comprise more than four films: (1) An A.P. view of the whole field; (2) a lateral view showing the whole of the pelvic canal and as much of the uterus and foetus as possible; (3) an outlet view; and (4) a P.A. view to study and "measure" the foetus—that is, the assessment of available diameters of the foetal skull and of development and normality of the foetal skeleton and skull. He was usually able to assess maturity to within a few days. He disagreed with taking a supero-inferior view through the pelvic inlet, because in this position the foetal breech was most likely to lie in the central beam of the *x* rays and nearest to the tube, a fact which might cause damage to gonadal tissues. So far there was no reliable information on that point. In general, mid-pelvic diameters were the ones requiring most careful study, especially in relation to pelvic mobility. Co-operation with the obstetrician was essential.

Miss MEAVE KENNY (London) said that she was an "impressionist," believing in the value of stereoscopic *x*-ray pelvimetry. There was a great need for the accurate measurement of the pelvis, for although the infantile mortality rate had fallen considerably in the last half-century there had been no difference in the figures of the years 1900 and 1947 of deaths in the first day and first week due to birth trauma (Martin, *British Medical Journal*, 1949, **1**, 438). The day might come when every woman would have her pelvis *x*-rayed. There was no absolute indication nowadays for caesarean section, and the incidence of this operation had not risen because of *x*-ray pelvimetry.

Dr. S. JOSEPHS (Newcastle-upon-Tyne) described his method of cephalometry. He said that 30 cases had now been collected in which radiological cephalometry had been performed twice, and in no case had there been any evidence of growth during the last four weeks of pregnancy. That investigation was continuing, with estimations of foetal skull size at 32 weeks, 36 weeks, and at term.

Mr. LINTON M. SNAITH (Newcastle-upon-Tyne) said that he had been associated with Dr. Josephs in this important discovery. He stressed the importance of estimating mid-cavity pelvic size, and labour should not be allowed to proceed where it was inadequate. Dr. ALAN BARKER (East Kent) thought Professor Moir's charts were the answer to the general practitioner's problems.

Dr. A. J. MACLEOD (North Uist) thought ossification of the foetal skull was more important than size. Mr. J. A. STALLWORTHY (Oxford) described himself as an "unbeliever" and maintained that after two years' experience a registrar could give a better forecast of the outcome of a labour by clinical means than by using the available radiological methods. Professor T. N. A. JEFFCOATE (Liverpool) advocated the uses of trial labour and of "intranatal" radiology (*x*-ray examination during labour).

Others taking part in the discussion included Mr. C. SCOTT RUSSELL (Manchester), Mr. ARNOLD L. WALKER (London), Mr. R. NEWTON (Manchester), Dr. R. D. B. WRIGHT (Hull), Dr. T. F. REDMAN (Manchester), Dr. J. LÖVSET (Norway), and Mr. G. GORDON LENNON (Oxford).

SECTIONS OF PATHOLOGY AND BACTERIOLOGY AND TROPICAL MEDICINE

Wednesday, June 29

The Sprue Syndrome

Dr. J. G. GREENFIELD was in the chair for the first part of the meeting and Dr. BALFOUR KIRK for the second.

Professor A. C. FRAZER (Birmingham) defined the sprue syndrome as including tropical and non-tropical sprue and the coeliac syndrome. Fat absorption was constantly affected, and on this background of steatorrhoea such things as watery diarrhoea, vitamin deficiencies, and haematological changes were superimposed in varying degree. The fat-absorption defect was a partial one, and could be related to the amount of fat fed. The sprue patient was intolerant of saturated fatty acids, and the fat in sprue stools was mainly of this type, though short-chain volatile fatty acids might also be greatly increased. The usual increase in particulate blood-fat (chylomicrons) after a fatty meal was absent in the sprue syndrome. When particulate fat absorption was impaired more fat might be hydrolysed, and there might be increased mucus formation in the intestinal lumen, leading to further interference with particulate fat absorption, and also possibly to flocculation of barium sulphate emulsion, giving rise to the characteristic deficiency pattern seen radiologically. The vitamin deficiencies which were so characteristic of the established sprue syndrome might be associated with an increase of the bacterial population of the intestine. These might invade the small intestine, and even the stomach in achlorhydric patients, and their competition for the vitamins in the diet would impoverish their host. Alterations in dietary fat and an increased susceptibility to overgrowth of intestinal bacteria might account for the increased incidence of the sprue syndrome under tropical conditions.

Professor Frazer's address was followed by a brisk discussion. Professor R. J. V. PULVERTAFT described work in which he had removed the ileo-caecal valve in dogs, thereby allowing colonic bacteria to invade the small bowel; no blood changes had followed this procedure, and steatorrhoea had not been observed. In reply, Professor FRAZER suggested that possibly the quantitative conditions needed for producing steatorrhoea had not been attained. Dr. G. M. FINDLAY asked if there were any explanation for the absence of sprue in tropical Africa; Professor FRAZER quoted work done by Dr. J. M. French in his department, which demonstrated that the type of dietary fat might influence the appearance of the sprue syndrome. There were considerable differences in the fats eaten in India and in Africa. Dr. J. P. CAPLAN asked why prisoners in Japanese hands had failed to developd the sprue syndrome, although on a very deficient diet. This was explained by the very low fat content of their diet, too low to enable steatorrhoea to become apparent.

Dr. D. A. K. BLACK (Manchester) suggested that although impairment of fat absorption was perhaps the most obvious and characteristic feature of the sprue syndrome, it was probably always attended by defective absorption of other substances, though this might not be apparent clinically. He had recently seen a patient who presented a case of iron-deficiency anaemia. Steatorrhoea had been found, and intravenous iron had given a good haematological response, although the anaemia was refractory to iron given by mouth. To the pathologists Dr. Black commended the virtues of a three-day fat-balance test in the diagnosis of doubtful cases of steatorrhoea. When steatorrhoea was obvious on inspection of the stools laboratory tests were not needed. It was important to bear in mind the danger of salt depletion in those patients with sprue in whom there was severe and long-continued diarrhoea. Liver and sulphaguanidine had proved effective in arresting watery diarrhoea in the sprue syndrome.

Dr. K. D. KEELE (London) had had an unusual opportunity of observing the early stages of tropical sprue during his work in Bihar and later in Poona. His experience had led him to distinguish a stage of "onset or relapse" and a stage of "remission." In the early stages diarrhoea was present in 80 to 90% of cases. Anorexia and vomiting were also common. With the appearance of remission, which might happen spontaneously or be induced by liver therapy, these symptoms became less marked, but often abdominal distension or a sore tongue appeared. There was considerable dissociation between the degree of steatorrhoea and the clinical state of the patient. For instance, liver could induce a complete clinical remission without the steatorrhoea disappearing. The action of liver seemed to be to enhance the absorption of water-soluble substances, but not of fat. In the aetiology of sprue, a high fat content of the diet probably played some part. In view of the high incidence of sprue in India in the hot season it would seem that a high effective temperature might precipitate sprue.

Dr. A. W. D. LEISHMAN (Sheffield) spoke of the blood changes in sprue. Marrow biopsy had increased knowledge of the anaemias of sprue. In early sprue severe anaemia was uncommon. In established sprue the anaemia might be macrocytic in type, although a megaloblastic bone-marrow was rather uncommon. This type of anaemia might well be analogous to the anaemia produced in rats by intestinal manipulation. In another type of anaemia found in sprue the haematological stigmata of iron deficiency complicated the macrocytic anaemia. When the bone-marrow was megaloblastic there was a good response to folic acid; otherwise the response was poor. Macrocytic anaemia must be looked on as a delayed complication rather than as an essential part of the sprue syndrome.

In the concluding discussion Air Vice-Marshal T. C. MORTON contended that the widespread use of sulphaguanidine in suspected cases of dysentery might explain the high incidence of sprue in the 1939–45 war. He also quoted Sir Patrick Manson's dictum that "sprue is the past participle of spree." Dr. G. M. FINDLAY asked whether the type of fat present in the "K diet" might be responsible for the high incidence of sprue in men who had taken this diet. Dr. KEELE, while disclaiming knowledge of this type of fat in the diet, was emphatic about its nauseating properties.

SECTION OF RADIOLOGY

Wednesday, June 29

Radiotherapy in Spondylitis Ankylopoietica and Osteoarthritis

With Professor B. W. WINDEYER, vice-president, in the chair, the subject of radiotherapy in spondylitis ankylopoietica and osteoarthritis was opened by Dr. E. L. GWENDOLEN HILTON (London). The first of these conditions, she said, was often a crippling disease and attacked mostly young men. Gold therapy, which was very useful in rheumatoid arthritis, was of no value in the treatment of spondylitis. She had also seen patients who had been treated for months with vaccines but had steadily got worse. With *x*-ray therapy beneficial results began almost at once. Her remarks were based on nearly 1,500 cases, all of which had been carefully followed up. It was extremely easy to miss the early radiological appearances in spondylitic joints. Not all cases progressed to complete bony ankylosis of the whole spine. The disease might become quiescent spontaneously at any stage. In some cases the disease affected the spine only and not the peripheral joints at all; in others it might affect many of the peripheral joints early in its course. When once bony changes occurred they were permanent. In spite of complete clinical cure she had never noticed any radiological evidence of reversal of bony change.

Patients often asked whether *x*-ray treatment would have any deleterious effect, particularly on the genital organs. If the scrotum was properly protected no damage was done to male genitalia during treatment. In the female it was more difficult, because the ovaries came within the direct beam of the rays when the sacro-iliac joints were exposed, though if the joints were irradiated obliquely the dose received was reduced and amenorrhoea was not produced in every case. In young women *x*-ray treatment of the sacro-iliac joints should not be given unless it was essential; it should be given only if the woman was ill and incapacitated by disease. Finally, she had noticed a considerable difference in the progress made by patients who had received identical *x*-ray treatment but who, on the one hand, had had physiotherapy in her own hospital, and, on the other, had had physiotherapy elsewhere, administered by people who had less experience in dealing with spondylitics. The treatment should be adapted to the individual in each case.

Dr. MARGARET D. SNELLING (London) presented details of a series of cases of spondylitis treated at Middlesex Hospital. The aim of *x*-ray treatment had been to get rid of acute symptoms, restore function, and prevent recurrence of attack. About 300 cases of ankylosing spondylitis had been treated during the period 1937–47. Nearly all of them were males, and the great majority were in the second stage of the disease, in which the disease was active and affected the whole or most of the spine, Of the cases in this stage and in the first stage, with the disease active but localized, much improvement in symptoms within three months of treatment was recorded in 69%. Of 66 patients in the second stage whose progress was followed from three to five years after initial treatment, 48 showed marked improvement in symptoms and 35 marked improvement in signs. It was of the greatest importance to undertake physiotherapy and all adjuvant treatments.

Dr. L. JANET MALLENDER (Leeds) said that in the treatment of osteoarthritis radiotherapy was new; it did not replace the older and long-tried methods but it might offer an alternative. Opinions about the value of radiotherapy differed; it had been suggested that the effect was purely psychological. She presented figures relating to 259 patients with osteoarthritis. She formed the impression that small joints did better than large ones. The dissected figures were as follows:

	Relieved for More than 6 Months	Relieved for Less than 6 Months	Unrelieved
Males 117	55·5%	23%	21·5%
Females 142	46·5%	25·5%	28%

After quoting other figures, she said that *x*-ray therapy in osteoarthritis offered a most useful degree of palliation, and was well worth the small amount of trouble it entailed.

Professor B. W. WINDEYER said that in osteoarthritis radiotherapy should not be used when other simpler measures were likely to be effective. Dr. J. S. FULTON (Liverpool) considered that the value of radiotherapy in osteoarthritis was not as clearly known as it might be. As for *x*-ray therapy directed to the sacro-iliac joint, he did not think it could be given without involving the ovaries, and in his view it should not be given to women capable of bearing children.

SECTION OF ANAESTHETICS

Wednesday, June 29

Post-operative Pulmonary Complications

With the President, Professor R. R. MACINTOSH (Oxford), in the chair, Dr. E. M. BUZZARD (Oxford) began by considering lung abscess. This condition was very difficult to diagnose without *x*-ray examination. The once-common classical picture of the "putrid lung abscess" was now rare because of pre- and post-operative penicillin. The onset was insidious and often symptomless, and bronchoscopy had little place in its treatment. In its early stage the lesion was beyond reach of bronchoscopy. Surgical help should be sought early. There were two types of post-operative pneumothorax. In one, the condition was induced by misplaced paravertebral block needles, and in the other it occurred after an acute obstruction in the respiratory tract. Air escaped from the alveoli into the interstitial tissue and so into the pleura. The early recognition of atelectasis was important if the patient was to be spared prolonged convalescence and the possibility of bronchiectasis.

In the detection of atelectasis at the bedside reliance should be placed on physical signs rather than *x* rays. The characteristic onset within 36 hours of operation and the mediastinal shift shown by tracheal deviation were unmistakable features. Percussion and auscultation confirmed the diagnosis.

In treating atelectasis after abdominal operation bronchoscopy was not a beneficial procedure as a routine. He restricted its use to those weak people who could not cough up secretion themselves. After thoracic operations, however, particularly where purulent secretion was present, bronchoscopy might be life-saving. Carbon dioxide inhalation was of little value; complacency of the attendants was induced and voluntary effort of the patient interfered with. The possibility of the plug being sucked further into the bronchial tree could not be discounted. The incidence of atelectasis was higher after abdominal operations than after operations on other parts of the body, because of the presence of pain and muscle-splinting and possibly a viscero-bronchial reflex.

Dr. H. J. V. MORTON (Uxbridge), discussing the methods by which knowledge of the condition had been derived, emphasized that all complications should be recorded, particularly the minor ones. As a result of this practice the published morbidity rates had grown higher. The only technique for investigating post-operative atelectasis was by personal and repeated observation of cases. Experiments should be deliberately planned for the study of some particular aspect of the problem, and strictly comparable groups of cases used for control. Standard tests of significance should be applied to the data so obtained. Less rigorous methods would perpetuate confusion.

Mr. DONALD S. M. BARLOW (London), speaking as a thoracic surgeon, recognized three groups. In the first the chest was healthy but a bronchus had a mechanical block. In the second infection was present, with a true pneumonia or bronchitis. In the third there was both a mechanical block and infection. In the last group pre-operative lung disease was often present; it might be unsuspected pulmonary tuberculosis. The following factors might lead to atelectasis: aspiration of foreign material into the respiratory tract; operation in the presence of respiratory infection; too much atropine interfering with the normal moisture in the respiratory tract; and long-standing oesophageal obstruction. The oesophagus and stomach should be empty before operation, since fluid might run into the trachea without being noticed. He did not believe that a reflex was connected with atelectasis. The condition was rare in thoracic cases because it was not allowed to occur in hospitals where chest operations were performed. During operation the anaesthetist should be ready to employ suction if necessary. Patients should be oxygenated during the operation and for at least twelve hours after. Coughing was the main item in treating atelectasis. Bronchial plugs should not be allowed to remain for more than 48 hours or there was risk of ulceration of the mucosa. The prevention of chest complications should be part of the duty of the anaesthetist.

Dr. DONALD TEARE (London) described post-operative pulmonary complications in patients who had died within 24 hours of operation. Some died during recovery from asphyxia and anoxia. He had seen pneumothorax as well as air embolism from penetration of the lung by needles during regional block. With regard to atelectasis, the two prime factors were respiratory obstruction and a weak inspiratory effort. Curare could produce both of these by means of bronchospasm and respiratory depression.

Dr. JOAN MILLAR (Newcastle-upon-Tyne) discussed prophylaxis against atelectasis. Pre-operatively, attention was directed towards existing respiratory infection. A radiograph was taken, breathing exercises were initiated, and oral sepsis was treated. During operation she used adequate oxygen, light anaesthesia, and either intubation with suction or gravity to control secretions. Most anaesthetic techniques were equally good; ether did not increase the liability to atelectasis. Post-operatively, endobronchial instillation of penicillin was an important treatment.

Dr. B. G. B. LUCAS (London) showed that during inspiration the bronchi were larger than during expiration. He had tried to produce bronchial dilatation by administering ephedrine for two days pre-operatively. Nebulized amethocaine caused dilatation for a short time, and once the bronchi had closed down again ephedrine was useless. The possibility of oedema of the mucosa and damage to the cilia made that use of local analgesia unsuitable.

Professor R. R. MACINTOSH described cases of pneumothorax which had followed paravertebral block. He had used intravenous procaine as an analgesic after operation and wondered whether its beneficial effect might have been partly due to relaxing bronchospasm. Dr. W. W. MUSHIN (Cardiff) drew attention to the work of Hilding, who had demonstrated that negative pressure and airlessness of bronchi could be produced by the centrifugal movement of mucus films in the bronchial tree. Dr. T. CECIL GRAY (Liverpool) doubted whether bronchospasm ever occurred in human beings as a result of curare. Dr. A. R. HUNTER (Manchester) believed that pulmonary complications were primarily infective in origin. Dr. J. A. G. HORTON (Newcastle-upon-Tyne) had examined the sputum of patients before and after operation. A number of the post-operative samples contained pathogenic cocci not present before operation. Dr. R. F. WOOLMER (Bristol) inquired whether expectorant drugs had any place in the treatment of atelectasis. Dr. BUZZARD doubted whether there were any real expectorants. Drs. H. R. YOUNGMAN (Cambridge), KATHLEEN E. THOMPSON (Morecambe), H. B. WILSON (Aberdeen), G. S. W. ORGANE (London), A. H. GALLEY (London), and W. S. MCCONNELL (London) also took part in the discussion.

SECTION OF ANATOMY AND PHYSIOLOGY

Wednesday, June 29

Anatomy and Physiology of the Skin

Professor H. BARCROFT (London), who spoke on "Factors Regulating Blood Flow in the Skin," reviewed methods of examining and measuring circulation in the skin. For the most part these methods could only be applied to the distal parts of the limbs, parts containing a large proportion of skin with a specialized circulation. Among them were observations on the temperature of the skin of the digits; plethysmographic recording of blood volume or blood flow changes in the digits or in the hands or feet; calorimetric measurement of the heat given out by the blood stream in the fingers; the display of subcutaneous veins by infra-red photography; and the determination of the circulation time by fluorescein.

He then gave an account of recent work. Arnott and Macfie had shown that the blood flow in the fingers was increased by

heating only part of the body; this vasodilatation was caused by inhibition of vasoconstrictor tone rather than by the action of any vasodilators. Light falling on one part of the body caused vasodilatation in another part (Cooper and Kerslake). This was not due to local heating of the blood and a consequent rise in body temperature, because it occurred after occlusion of the arterial supply to the part exposed to light. Vasoconstriction in the skin of the fingers caused by deep breathing continued even after spinal section in man, unlike the vasoconstriction due to psychic reactions. It would appear that there were spinal vasomotor reflexes. Increased blood flow in the skin during pregnancy was suggested by the dilated veins which could be demonstrated by infra-red photography (Bowes). Fluorescein injections had been used to assess the vascularization of the pedicles of skin grafts. The effects of sympathectomy on cutaneous blood flow have been followed in the postoperative period; the immediate dilatation was followed by a rapid return of tone to the cutaneous vessels. It was pointed out that plethysmography offered a means of assessing the action and value of vasodilator drugs.

The discussion which followed this paper centred largely on the changes in cutaneous blood flow which occurred during pregnancy, and it was agreed that there is clinical evidence of vasodilatation.

Dr. C. A. KEELE (London) said that sweating was controlled by (1) stimuli causing sweating, (2) the efferent nerve pathways concerned, (3) the chemical transmitter between nerve endings and sweat glands. Kuno differentiated between "mental" and "thermal" sweating. Thermal sweating was least on the palms and the soles; greatest on the forehead, dorsum of hand, axilla, chest, and back. Mental sweating was greatest on the palms and soles, but occurred also on the forehead and face. Sweating was regulated by the sympathetic division of the autonomic nervous system, and control might be effected at cortical, hypothalamic, and spinal levels. The centre for thermal sweating was in the anterior hypothalamus and was stimulated by a rise in the temperature of the blood. The posterior part of the hypothalamus might regulate cutaneous vasoconstriction and shivering.

The situation of the centre for mental sweating was unknown, but the sweating was sudden in onset and increased quickly. Sweating occurred in certain mass responses—for example, shock reactions—but its usefulness in some of them was uncertain. The nerve endings to the sweat glands were cholinergic, and this had led Keele and Chalmers to look for some upset in the transmitter mechanism to explain hyperhidrosis. The response of normal and hyperhidrotic subjects to acetylcholine injected intradermally had been compared. Although hyperhidrosis might be due to the persistence of acetylcholine owing to some local deficiency of cholinesterase, or to hypersensitivity of the sweat glands themselves to acetylcholine, no evidence pointing to these possibilities was found. Hyperhidrosis was therefore attributed to overactivity of the centres.

Dr. R. E. BILLINGHAM (Birmingham), discussing the anatomical basis of epidermal pigmentation in man, said that melanin pigment granules were found in the deepest layer of epidermal cells, but obviously there were great differences in intensity of distribution between different races. The epidermis had two distinct types of cells: the basal-cell layer, from which by differentiation and keratinization the overlying layers were formed, and the dendritic cells. The latter were responsible for producing pigment. They could be demonstrated by separating dermis and epidermis by the tryptic digestion of small shavings of skin. If the digestion was prolonged the basal-cell layer began to come away and the processes of the dendritic cells were clearly shown. The dopa (dihydroxyphenylalanine) reaction had been applied to demonstrate the formation of dopa melanin in the dendritic cells, but the ordinary basal cells did not show it.

The processes of the dendritic cells ran upwards and horizontally between the round basal cells and ended as caps in contact with some of them. Almost every round cell in the basal layer was "capped," and the pigment granules within them had a polar distribution corresponding to the situation of the cap. In the upper layers the distribution of granules was random. It appeared that pigment was formed in the dendritic cells and transferred to the basal cells. In negro and Indian skin melanin was constantly being produced, but a definite stimulus, such as ultra-violet light, had to be applied to Caucasian skin to cause formation. It was suggested that there might be an inhibitor in Caucasian skin which was removed by the stimulus. The dendritic cells also supplied pigment to the hairs.

Dr. G. WEDDELL (Oxford), describing the pattern of cutaneous innervation, said that specific end-organs could be associated with certain sensations—Krause's bulbs with cold, Meissner's corpuscles with touch. A definite "spot" on the skin, a cold spot or touch spot, was usually related to a group rather than to a single end-organ. Nerve fibres corresponding to each organ left the region, which in this sense had multiple innervation. A hair bulb and hair might have two or three separate nerve fibres in which action potentials might be recorded.

Long-branching beaded processes were associated with pain, and they formed a network which might be the anatomical basis for the reactions on which Lewis based his hypothesis of the "nocifensor system." Disturbances in sensation at the margins of areas of local analgesia due to drugs, ischaemia, or nerve degeneration were thought to be associated with changes in the usual grouping of end-organs or the overlapping supply of the fibres subserving pain. The brain did not usually receive impulses derived from a single nerve ending, and normal sensation might depend upon the pattern of impulses projected on to the central nervous system.

SECTION OF NEUROLOGY AND PSYCHIATRY

Wednesday, June 29

Intractable Pain

Dr. J. PURDON MARTIN said that pain which had become intractable had ceased to be protective. Many cases of intractable pain were associated with lesions in nervous tissue—postherpetic neuralgia, probably trigeminal neuralgia, causalgia, tabetic pains, the pains of syringomyelia, and the thalamic syndrome. In other cases nerves were involved in new growths. There was a partial lesion, or partial recovery of a lesion, of the pathways conducting painful impulses from the peripheral receptor fibres to the thalamus itself in a large proportion of cases.

A second group of patients were suffering from lesions affecting other structures, particularly bone. Pains might also reflect disturbances of function consequent on an organic lesion, as in angina or intermittent claudication. Pain was excited by a normal mechanism, which became unduly sensitive. The third group of cases, the most intractable, included painful neuroses, obsessional pain, and hysterical pain frequently affecting some part of the neck and tongue. Local operations aggravated the condition, and in Dr. Purdon Martin's experience psychotherapy had not proved helpful.

Surgical interruption of the conducting pathway between the site of the disturbance and the sensorium was applicable to all cases in the first and second groups, except the thalamic syndrome. It was still not known whether such cases could be relieved by an operation on the thalamus, or by prefrontal leucotomy. Prefrontal leucotomy was applied to the obsessional and hysterical cases. Medical treatment had not made any great advance. "Trilene" had a selective action on the trigeminal nerve. Morphine still retained absolute superiority in relieving pain. Pethidine and physeptone were in a lower rank, and pethidine might cause addiction.

Mr. WYLIE MCKISSOCK described the applications of spinothalamic cordotomy and prefrontal leucotomy. Spinothalamic cordotomy had proved highly successful in the treatment of intractable pain in the lower limbs and trunk as high as the fourth dorsal segment. In a total of 44 cases there were 36 successes, 7 failures, and 1 death; 6 failures were due to the low level of anaesthesia. The operation had been undertaken to relieve pain due to malignant growths (28 cases), neurofibromatosis (2 cases), painful flexor spasms (3 cases), and in one case each of osteoarthritis of the hip, spina bifida, post-herpetic neuralgia, abdominal pain, and intractable sciatica.

Intractable pain not extending much above the nipple line could safely be treated by section of the opposite spinothalamic tract at the level of the first to the third dorsal vertebrae. The operation was best performed under general anaesthesia in the sitting position—if the level of anaesthesia was not high enough the wound could be reopened in 24 hours to increase the extent of the cordotomy.

Mr. McKissock then described the details of the operative technique. Transient bladder disturbances which occurred post-operatively after bilateral section of the tract might prove permanent in patients with pre-operative changes in the bladder.

For intractable pain in the upper limb cordotomy was less successful. Intractable pain here was usually due to malignant growths, so that the operation of prefrontal leucotomy might properly be considered when other methods of treatment had failed. The results of leucotomy in a series of six cases had been good. Two patients had intractable thalamic pain, one post-herpetic neuralgia, three malignant disease. After operation the patients never spontaneously complained of pain; they were serene and required no drugs. The result was poor in one patient who required an extensive bilateral leucotomy. He became too apathetic to eat, and would not make a will before he died of carcinoma.

Dr. E. B. STRAUSS said that any discussion of pain raised the insoluble "body–mind" problem. An artificial distinction was often drawn between "real" and "imaginary" pain, despite the fact that all pain was in the final analysis a psychic event. Pain was an emotional as well as a sensory experience. Pain divorced from its emotional component was very different from the total experience, as was well shown by leucotomy. Severe pain which did not respond to analgesic drugs was likely to be psychogenic, or emotionally overdetermined. Many pains primarily psychogenic were secondarily somatogenic. Thus colic associated with a spastic colon would be innervated in the usual way through the autonomic system, although the spasticity might be psychically determined. Such states could be treated pharmacologically as well as psychologically at one and the same time.

Hypnosis was a much neglected reliever of pain. Hypnosis could be induced by the individual without a hypnotist or the mystical concept of *rapport*. Salter, in the United States, had elaborated methods of training people in autohypnosis which appeared to be sound and relatively simple. It was useful for an individual to be able to abolish existing pain at will, cure his insomnia, render himself deaf to disturbing noises, increase his inclination to work, and eliminate stage fright and other crippling forms of self-consciousness without dependence on any psychologist.

Dr. ANDREW WILSON (London) proposed to confine his remarks to the more recent work on analgesics. Although morphine enjoyed world-wide reputation as a pain-relieving drug, its other actions on the gut and respiration, and the possibility of addiction, severely limited its effectiveness. He outlined the attempts made to solve this problem by the preparation of derivatives of morphine—heroin, dilaudid, metopon, and also the pethidine series and the miadone derivatives.

He discussed the absorption of these drugs and the recent evidence that neostigmine increases the intensity and prolongs the duration of their action. The respiratory depressant action of these drugs was important, though some derivatives of miadone did not appear to exhibit this property.

All the analgesic drugs so far tested were potentially drugs of addiction, and consideration must be given to the factors of psychical dependence, acquired tolerance, and physical dependence. More critical methods of assessing the likelihood of addiction to new drugs were needed.

Dr. W. RITCHIE RUSSELL (Oxford) showed a film illustrating his method of treating painful amputation stumps by repeated percussion of the neuroma with a mallet and wooden applicator, as described in his recent paper in the *Journal* (June 11, p. 1024).

Dr. HUGH G. GARLAND (Leeds) discussed the part played by the sympathetic, and recalled that in India he had had many patients with causalgia. Some of these he had treated successfully by sympathetic block. The technique was to produce a temporary block by means of procaine at weekly intervals for three weeks. This was followed later by sympathectomy. More recently he had tried a similar technique for cases of post-herpetic neuralgia with some good results.

Dr. J. E. CAUGHEY (Auckland) said that the incidence of causalgia in the New Zealand Division in the war was small, but his experience of sympathectomy was encouraging. He went on to discuss cases of cephalalgia. They usually presented with severe nocturnal unilateral pain associated with running from the eyes and nose. A similar pain could be induced in these patients by a subcutaneous injection of 1 ml. of histamine diphosphate. They could be desensitized by increasing doses of histamine diphosphate—starting with 0.01 mg. twice daily and ending with 0.5 mg. weekly. The headache tended to recur if the treatment was stopped.

Mr. W. R. HENDERSON (Leeds) drew attention to the distribution of organic and psychogenic pains. He said that in many cases psychogenic pain was in the distribution of a nerve and that the differential diagnosis was often very difficult.

Dr. MAX G. VALENTINE (Inverurie, Aberdeenshire) quoted recent reports on the value of unilateral lobotomy for intractable pain. Section on the side of the dominant hemisphere was particularly successful.

Dr. E. STENGEL (London) had noticed that in some hundreds of personally observed cases of psychological disorders treated by leucotomy there was no alteration in the response to painful stimuli apart from a general emotional indifference.

Dr. JAMES VALENTINE (Burley-in-Wharfedale) had seen some poor results following the surgical treatment of intractable pain. E.C.T. had temporarily improved some of his patients.

Dr. DOUGLAS GORDON-CAMPBELL (University of California) described the presence of damage to the occipito-atlantal joints revealed by tomography in cephalalgia due to head injury. Relief might be obtained by deep infiltration with procaine or by manipulation.

The President, Dr. W. RUSSELL BRAIN, described two cases: the first was a woman who had a glioma deep in the right parietal region involving the thalamus. A pin-prick on the left foot produced the typical thalamic overreaction. Pin-pricks simultaneously on both feet failed to produce this overreaction. This raised the most interesting possibilities concerning the part played by the cortex in the awareness of pain. The second case was a woman with carcinoma of the breast and secondaries involving her brachial plexus and causing severe pain. Leucotomy made her euphoric. There was some personality deterioration, but apart from that the result was strikingly good.

Mr. WYLIE MCKISSOCK, in reply, said that his patients, after leucotomy, perceived extraneous painful stimuli normally. He also said that leucotomy, as practised in this country, produced comparatively little personality change. This was probably due to the limited material of the operation as compared with that practised elsewhere. He advocated a technique for undercutting areas 9 and 10. This produced very little personality change and was effective in controlling the pain.

Dr. PURDON MARTIN, in summing up, remarked how the discussion had emphasized the close affiliation between neurology and psychiatry. He said that Professor Weiss, of Strasbourg, had given up leucotomy for intractable pain, except in people with a short expectation of life, because he had found that after a time the pain tended to recur. The problem of persistent post-herpetic neuralgia was particularly difficult, because the patients were so often obsessional.

SECTION OF OCCUPATIONAL HEALTH

Wednesday, June 29

The Future of Occupational Health

The President, Professor R. E. LANE (Manchester), who was in the chair, opened the proceedings by stressing that in its present economic predicament this country could not afford to deploy its doctors unwisely. Medicine could exist in industry, not as a luxury, but only as a service contributing to the health and efficiency of industry.

Dr. DONALD STEWART (Birmingham) said that a number of individuals and scientific groups believed that there was need

for the expansion of occupational health services. The Prime Minister had recently appointed a committee to advise on the organization of these services so as to ensure that there was no overlapping with the National Health Service. As a basis of any plan for future expansion the aims and purpose of an occupational health service should be clearly defined, and these had been set out in a recent B.M.A. report (*Supplement*, May 28, p. 296). There were five main purposes. First, to attend to hygiene and environmental conditions. Secondly and thirdly, to assess fitness for work and provide for rehabilitation and resettlement. Fourthly, to provide for the emergency treatment of illness and injury. Here he said that too many medical officers were doing too much curative treatment, which in small units should be cut to a minimum. Fifthly, to promote research. With the reorganized Industrial Health Research Board this country was now pursuing industrial health research as never before.

The purposes could not be fulfilled without educating industrial medical officers on the lines adopted by Manchester University. The selection of these medical officers must be just and wise and satisfactory to all parties in industry. There should be a central authority planning the services. The Ministries of Labour, National Insurance, and Health all had claims, but of the three the Ministry of Health was the one he would choose. Within this Ministry there should be a small Department of Occupational Health, which should first appoint 14 regional consultants who would undertake surveys to find out facts on which the future services would be based. After regional surveys, suitable standards could be laid down and related to different types of industrial organizations. Legislation would be required giving power to force firms with no services or with substandard services to come up to these standards. Those firms already having their own services would be approved, provided their identical health services reached the required standard. Each organization should bear the cost of service with suitable allowances on an agreed basis with the Treasury.

Progress in the development of a national service should be slow and based on facts. It would be wise to start with a small administrative organization capable of expansion. The prospect would be gloomy if there was to be a rapid growth based on confused concepts. It would be foolhardy to rush into a national scheme without essential data.

Dr. STUART LAIDLAW (Glasgow) said that occupational health was a specialized branch of preventive medicine and had a basic relationship with public health. It was reasonable to advocate that the practice of occupational health could be undertaken by some of the larger local health authorities.

In Scotland there were twelve large cities or industrial counties in which over 90% of all its factories were situated. These authorities already had statutory duties and legal powers for factory supervision. In Glasgow two pilot investigations had been carried out in a weaving mill and in the Corporation cleansing department by medical officers attached to the Glasgow Public Health Department. It was shown that an efficient service could be provided for smaller units in industry by a public health authority with the assistance of general practitioners at little extra cost to the community.

Other arguments in favour of an occupational health service based on the major local health authorities were that the school medical and the industrial health services could easily be brought more closely together. The staff of the health department included impartial investigators who had access to and close liaison with other health workers in the local authority. Particular attention should be paid to providing health services for cafés and restaurants.

Dr. N. J. COCHRAN (Burton-upon-Trent) said that the employment of part-time general practitioners in factories offered a more practicable solution to the problem of providing a service for small factories than group services with whole-time industrial medical officers. Group service was impracticable for scattered factories partly because it entailed too much time spent in travel; and even for small factories in areas such as trading estates it was difficult for one doctor to make close contact with many employers and several groups of workers. Provision must be made for other working groups such as those in offices, laboratories, hotels, catering establishments, transport undertakings, etc., which all had both special and general occupational health problems.

The general practitioner with duties in industry could see both the industrial and domestic aspects of disease and ill-health. Dual responsibility of this kind would help to break down the barriers set up by specialization and would eventually be of benefit to the patient. Large industrial communities should have whole-time medical officers. The general practitioner working in industry could help to relieve the growing burden of sickness which weighed so heavily on the personal health services.

In the discussion which followed, Dr. ALICE STEWART (Oxford) said that decisions about new schemes should be postponed until more facts had been collected by the academic departments of social and industrial medicine, which were equipped to carry out selected field surveys.

Dr. E. H. CLUVER (Johannesburg, S. Africa) said that in his country gold-mining was the main industry with the predominant hazard of silicosis. It was now realized that nearly all the people were "occupied" and therefore subject to occupational hazards. In the reorganization of the training of South Africa's medical students it was proposed to pay special attention to social medicine, which would include occupational health.

Dr. W. BLOOD (London) stressed the dangers of increased mechanization, which made it almost impossible to place every worker in a job which satisfied his abilities. He considered that Dr. Laidlaw's work showed the need for increasing the size of the factory inspectorate.

Dr. F. S. COOKSEY (London) said that occupational health must be regarded under the headings of research, teaching, and field work. A central organization was necessary to stimulate research and teaching, but the responsibility for administering field work should be decentralized.

Concluding the discussion, Professor G. P. CROWDEN (London) said that the problems of occupational health called for co-ordinated team work. Before 1939 special intensive courses were organized for medical officers, safety engineers, personnel managers, nurses, and welfare supervisors. They met together and the spirit of co-operation was encouraged at an early stage of their training.

Several other speakers emphasized the importance of making the fullest use of general practitioners in any future scheme for occupational health services.

SECTIONS OF ORTHOPAEDICS AND RHEUMATOLOGY

Wednesday, June 29

Synovial Membrane

Under the chairmanship, first, of Mr. R. BROOMHEAD (Leeds), president of the Section of Orthopaedics, and, later, of Dr. W. YEOMAN (Harrogate), president of the Section of Rheumatology, Professor D. V. DAVIES (London) opened a discussion on the structure and function of synovial membrane. Synovial membrane, he said, was a relatively undifferentiated tissue forming the lining cells of the joint space developed within the embryonic mesenchymal condensation which became skeletal. Being undifferentiated in comparison with bone, cartilage, and ligaments, it had great powers of regeneration. But, being of the same mesenchymal origin, it was not surprising that under pathological conditions it might produce within it cartilage and bone. Its capacity to produce mucin strengthened the similarity to embryonic connective tissue. Its vascular structure influenced the formation and absorption of synovial fluid. The synovial cells were active in the removal of particulate matter from the joint cavity, as was well seen histologically when, after haemorrhage into the joint, those cells were found loaded with haemosiderin. The vascularity was increased at the edges of articular cartilage to form Hunter's vascular circle, which nourished the peripheral portions of that otherwise avascular structure. Except for the mucin, synovial fluid was a dialysate from the blood, and the addition of mucin admirably adapted the fluid to retention within the joint. The innervation of synovial

membrane was a controversial subject, and he supported Gardner's views that no free nerve networks or end-organs were found associated with the subjacent blood vessels. He had been able to prove in a living person that the membrane was insensitive to touch, pricking, and pinching; tugging, however, was soon resented, but the pain was not well localized by the patient and was thought to be due to more remote drag upon capsular ligaments.

Mr. D. ENGEL (Dewsbury) said his own work tended to show that the permeability of synovial membrane was diminished by inflammatory states and by lumbar sympathectomy.

Dr. D. H. COLLINS (Leeds), discussing varieties of pathological reactions in human synovial tissues, considered the pathological changes in synovial membrane under three heads: (1) Changes in synovial cells; (2) vascular and exudative phenomena; (3) leucocytic reaction. Under the first he emphasized the importance of histiocytic differentiation and phagocytosis, which were characteristic of haemarthrosis and were present in certain benign synoviomata. Such histiocytes might fuse and form the giant cells of a variety of pathological lesions. The vascular reactions of synovial tissues were often out of proportion to the severity of the inflammatory stimulus; the former was not infrequently maximal while the latter was minimal. Perivascular lymphocytic infiltration was slight in cases of chronic trauma and osteoarthritis. Massive infiltration was found only in severe chronic inflammation, and was particularly striking in rheumatoid arthritis; neutrophil polymorphic leucocytes were few, but it was noteworthy that in neighbouring joint effusions the proportion was reversed and they contained many polymorphs —probably because of their greater powers of motility. The rapid development and subsidence of these changes were well illustrated by the articular phenomena of rheumatic fever. Synovial tissues had a great capacity for repair and regeneration. These facts supported the views of Hench and his co-workers on the reversibility of joint inflammation, particularly in its less chronic forms.

Arthritis of the Hip-joint

Mr. H. PETTY (Leeds), discussing the denervation operation, reviewed the anatomy of hip-joint innervation. He had used partial denervation of the hip-joint in 19 cases. The results were encouraging. In three cases relief of pain was complete and in 12 was good, there being only occasional slight aching afterwards. Extraperitoneal resection of the obturator nerve was required, and division of the branch of the sciatic nerve to the quadratus femoris (the main posterior articular supply). The high division of the obturator nerve was justified because of the occasional high origin of articular branches and the advantage of denervating the adductor muscles.

Mr. R. BROOMHEAD (Leeds), after paying tribute to the work of Smith-Petersen, reviewed 100 cases of mould arthroplasty of the hip-joint which he had performed for a variety of conditions. Suitable cases must be medically fit and of a mental capacity to understand and co-operate in the pre- and post-operative regime. Age had little and sex no bearing on the result. The mortality was practically *nil*. The most important local factor influencing the result was the condition of the hip musculature. The best results were in patients with the most nearly normal muscles. The worst muscles were those fibrotic ones found in chronic rheumatoid and spondylitic hips, in which the results of arthroplasty were not good. He pleaded for the earlier consideration of arthroplasty by physicians in such cases, for surprisingly good results had been obtained in treating these acute forms of disease. Among other types of disease osteoarthritis gave the best results with this treatment. In young people those who had had early Perthes's disease or adolescent coxa vara did very well, those with spontaneous osteoarthritis not so well. In the largest group of cases—that is, of morbus coxae senilis—there was, as in all the others, freedom from pain and a range of movement which on the average was 40% of normal. Better results were obtained in patients with a long femoral neck. Deformity, particularly external rotation and flexion, added to the post-operative difficulties. One of the difficulties encountered after operation might be the formation of new bone, which might lock the cup in position and limit movement. It could be minimized by manual care while operating and by washing out all particles of bone dust.

Among the speakers who joined in the discussion Dr. DONALD WILSON (Bognor Regis) and Dr. G. D. KERSLEY (Bath) emphasized the soundness of Smith-Petersen's method of pre- and post-operative care—the training of muscles and the prolonged use of crutches. Mr. NORMAN CAPENER (Exeter), mentioning the unsatisfactory results of mould arthroplasty in ankylosing spondylitis, recommended Batchelor's procedure of excision of the femoral head and neck with a Schanz type of subtrochanteric osteotomy. This view was supported by Mr. F. W. HOLDSWORTH (Sheffield). Mr. H. JACKSON BURROWS (London) mentioned the effective method of hip-joint denervation practised through the Kocher posterior approach by his old teacher Elmslie in his operation of extirpation of the capsule.

Mr. BROOMHEAD in his reply agreed with most of what had been said, but, referring to arthrodesis for single osteoarthritic hips, warned against the possibility of osteoarthritis developing in the opposite hip.

Physical Treatment of Arthritis

Dr. H. F. TURNEY (London) said that whereas superficially applied heat was useful for the knee, short-wave diathermy was more suitable for the hip-joint. Exercises, which should be of non-weight-bearing type, were of particular importance for the restoration and maintenance of movement and for the muscular reconditioning which was of special significance in the knee, the stability of which was so dependent on its muscles. In all this work the Guthrie Smith apparatus, or improvised machinery of this type, was of great value. Active exercises were more important physically and psychologically than passively applied faradism. It was important to avoid fatigue. Reduction of weight by diet might be of value, but no particular diet benefited arthritis. The value of mud packs was in their poultice-like heating effect and not in the nature of their constituents. The beneficial effect of intra-articular injections was attributed to their acid content; he was not convinced of this in practice. Nevertheless such treatment was of great value; non-acid solutions could be used. Part of the benefit appeared to be due to the initial mobilization under local analgesia and the after-treatment. It should not be pursued indefinitely if no relief was obtained. Sometimes the results were dramatic.

Mr. GRANT WAUGH (Sunderland) believed the reactions of synovial membrane and their treatment had been much neglected. Because of the sensitivity of some of his patients to procaine he had given up administering this drug in his injections of lactic acid, the continued good results of which were independent of any local analgesic action. No other drugs were as satisfactory.

SECTION OF CHILD HEALTH

Wednesday, June 29

Common Feeding Difficulties in Infancy

A warm welcome was extended by the President, Emeritus Professor C. W. VINING (Leeds), to guests who included Dr. V. A. FENGER (Danish Medical Association), Dr. I. C. YUAN (World Health Organization), Professor C. C. DE SILVA (Ceylon), and Dr. D. G. CAMPBELL (San Francisco).

Professor R. S. ILLINGWORTH (Sheffield) contended that many of the difficulties arising in connexion with infant feeding were man-made and preventable. Routine regular test feeds might contribute to early failure of lactation by worrying the mother, by implying doubt about her ability to breast-feed, and by leading to the premature adoption of complementary feeds. Doctors, he thought, had a better knowledge of abnormal than of normal infant feeding.

Reviewing other common difficulties, Professor Illingworth deprecated the use of a fixed and rigid feeding schedule; drew attention to the undesirability of too strict insistence on a baby being put to each breast for ten minutes at each feed; stressed the danger of too much emphasis being placed on overfeeding; and commented on the effects of excessive clothing. Loneliness

gave rise to difficulties, and an infant should not be kept separated from the mother. A diagnosis of underfeeding required confirmation by test feeds before any question of taking a child off the breast was answered. Defective weight gain might arise as a result of defective intake, low-grade sepsis, or excessive clothing, or it might follow too literal adherence to "instructions on the tin" and too great reliance on the spoon as an accurate measure. Laxatives taken by the nursing mother were a not uncommon cause of diarrhoea in the infant, but in the breast-fed infant normal stools were often mistakenly described as loose, and stools normal in all respects might be described as constipated because of apparent infrequency.

Dr. CHARLOTTE NAISH (York) discussed common feeding difficulties in infancy from the point of view of the general practitioner. In assessing the value of breast-feeding it was misleading to compare "the underfed breast-fed baby" with "the fully fed baby reared artificially." Insufficiency of breast milk was an indication for complementary feeds and not for the termination of breast-feeding.

Study of 100 consecutive cases in general practice showed that circumstances (excluding accidents and notifiable infectious diseases) calling for domiciliary visits for babies of less than 1 year of age were much less common in the case of infants who had been breast-fed for an appreciable period than in those who had never been breast-fed or who had been breast-fed over only a short period. Morbidity was not influenced by social level.

There were among mothers "good, medium, and poor milkers." Too much must not be made of this fact, however. The likelihood of achieving successful breast-feeding was closely linked with the system of supervision. Often there were too many supervising authorities. Close contact with the patient must be maintained by the doctor. Breast-feeding must be discussed freely during the antenatal period, and continuity of supervision was essential. Portable scales were useful used in the third and fourth weeks at the time of the customary post-natal visits. Advice and supervision could be continued by the general practitioner at clinic sessions organized for this purpose.

Professor S. G. GRAHAM (Glasgow) dealt with problems related particularly to feeding of the premature infant. Feeding problems were inseparable from those concerned with the prevention and cure of disease in premature infants. Considering the smallest premature infants in the first few weeks of life, Professor Graham said that there was no evidence to justify the view that breast milk was not the milk of choice. Those who believed otherwise attached too much importance to gain in weight as the sole criterion of progress. There were other criteria, such as ability to feed, activity, and colour. The amount and technique of feeding were important. It was dangerous to stimulate these infants too early or too quickly. Oedema was common, and resulted from capillary damage due to anoxia and immature kidney function. Anoxia called for oxygen therapy. In the presence of oedema fluids should be withheld for at least 24 to 48 hours. Feeding by the bottle was desirable. Gavage and the use of a pipette involved a risk of aspiration pneumonia. The results of feeding the premature infant depended on the nursing staff.

Impressions based on a survey of 1,000 children attending infant welfare centres were given by Dr. E. BADENOCH (Birmingham). The children represented a random selection. Difficulties in infant feeding had not been eased by social factors related to overcrowding, housing problems, and queueing. While more mothers were attempting breast-feeding, fewer were maintaining it for six months. Difficulties in artificial feeding arose from the nature of "the instructions on the tin"; and from a tendency to give too few feeds. Habit vomiting was a fairly common source of trouble. Approximately 10% of infants are unable to take cod-liver oil in pure form, but they tolerated maintenance doses of concentrated vitamin preparations. Mild rickets was confirmed in 10 out of 2,000 babies examined in connexion with adoption proceedings. Common clinical conditions encountered were: pyloric stenosis under 2 months; gastro-enteritis and respiratory infection between 2 and 5 months; teething disturbance and otitis media between 5 and 8 months; and pyelitis between 8 and 12 months.

Mother-love was important, and the mother's daily presence was essential, and preferable to isolation in a nursery. Dried milks were the most favoured substitute for human milk in the lower-income homes, and have contributed to the reduced incidence of gastro-enteritis among infants.

Dr. J. MACKINTOSH (Birmingham) also stressed the importance of education beginning during the antenatal period. She suggested that local authorities might help family doctors undertaking antenatal care by lending local authority staff to provide the health education. In some instances use might be made of welfare and other centres.

Subsequent speakers raised a number of points. Professor C. C. DE SILVA (Ceylon) referred to the absence of feeding difficulties among the lower-income groups in Ceylon. He asked that the profession in this country should discourage the view common among Europeans that breast-feeding was contra-indicated in the Tropics. Dr. C. C. HARVEY (Doncaster) urged that greater attention should be paid to re-establishing breast-feeding prematurely discontinued. Professor A. E. NAISH (Sheffield) emphasized the value of test feeds, provided that the attendant was aware of variations within the normal range and provided that the mother had had explained to her the purpose and interpretation of the procedure. Test feeds at monthly intervals helped in the early detection of slight falls in milk supply which if uncorrected might contribute to undernourishment and anorexia on the part of the infant. Dr. POOLER (Chesterfield) said child-welfare experience confirmed the need for elasticity in education. The tenth day of the puerperium, when the mother resumed domestic responsibilities, was a danger period in lactation. Dr. SIMON (York) agreed that education for breast-feeding should start antenatally, regretted the multiplicity of foods available because they encourage unnecessary feeding changes, and commented upon the fact that adolescent schoolgirls thought of infants in terms of babies with bottles and teats. Dr. GOLDSBOROUGH (Leeds) said that changes in rationing and the national diet handicapped breast-milk secretion by depriving mothers of essential hormones of exogenous origin. In his experience only 10% of women are able to nourish their babies at the breast.

Dr. MARY CROSSE (Birmingham) shared views expressed previously concerning the value of breast milk for premature infants; suggested that there might be some advantage in giving extra protein to infants of birth weight under 3½ lb. (1.59 kg.); and said she had come across only one case of retro-lental fibroplasia in 3,000 premature babies. Dr. J. WEBB (Windsor) urged a review of teaching methods. Children's physicians and local authority medical officers should have more insight into each other's work. He emphasized the value of hospital breast-milk banks. Dr. S. KELSEY (Cheltenham) confirmed previous criticism of instructions on tins of artificial food. The basis should be expected weight and not age.

Summing up the discussion, Professor ILLINGWORTH stressed the need for knowledge of neonatal physiology; referred to the reduced risk of infection in breast-fed infants; and urged differentiation between overfeeding and wrong feeding.

Domiciliary Care of the Premature Child

Dr. F. J. W. MILLER (Newcastle-upon-Tyne) showed slides illustrating a domiciliary special nursing service at work in artisan homes in Newcastle. The service had been in operation since 1945. Of 244 premature infants born and nursed entirely at home 197 survived. Only 26 were admitted to hospital after receiving care from a home nurse. Assessment of the results was difficult. Comparing results with those obtained in premature units of the highest standard, it appeared that infants of birth weight over 3½ lb. (1.59 kg.) had as good a chance of survival at home as in hospital; and that the prospects of those under 3½ lb. were better in hospital. The value of the domiciliary service was threefold. It has a social value to the family, was a direct help to the family doctor, and facilitated the concentration of care on the very small infants accommodated in premature units.

In reply to questions Dr. Miller emphasized that the key to success in domiciliary care rested with the nurse and that ultimate clinical responsibility rested with the family doctor. Oxygen and electric blankets were supplied to these homes.

SECTIONS OF OBSTETRICS AND GYNAECOLOGY AND DERMATOLOGY

Thursday, June 30

Pruritus Vulvae

Professor T. N. A. JEFFCOATE (Liverpool) said that pruritus vulvae was a symptom for which approximately 10% of women consulted the gynaecologist. When patients complained of "irritation" of the vulva it was easy to assume that by this they meant "itching," whereas often they meant pain, tenderness, or a burning sensation. Unless there was a desire to scratch, the term pruritis should not be used. It was important to determine the site of the pruritus, for pruritus vulvae and pruritus ani often had different causes. It was also important to know if it was associated with pruritus elsewhere.

After discussing the mechanism of production of the sensation of itching, Professor Jeffcoate went on to consider the aetiology of pruritus vulvae. It might be associated with generalized pruritus, as in jaundice. Glycosuria was an important factor. Pediculosis gave rise to pruritus pubis rather than pruritus vulvae. His analysis of a large series of cases showed how many possible causes there were.

Causes of Pruritus Vulvae in 254 Consecutive Cases, Excluding Pregnant Women

	Number of Cases
Trichomonas vaginitis (not proved bacteriologically in 34, but clinically typical)	100
Chronic cervicitis, cervical erosion, and polypi	28
Trichomonas vaginitis probably present	9
Other factors present	4
Deficiency states	20
Vitamin B_{12} deficiency	3
Achlorhydria	13
Deficiency anaemia (iron or liver factors)	4
Psychogenic causes	18
Skin diseases not specific to the vulva: psoriasis, intertrigo, intra-epidermal cancer, etc.	14
Prolapse	12
"Leukoplakia vulvae"	9
Glycosuria, diabetes mellitus	8
Fungus infection of the vagina and vulva	6
Senile vaginitis	6
Idiosyncrasy to chemicals (soap, "dettol," pessaries, contraceptives)	5
Allergic states	4
Post-menopausal atrophic vulvitis	4
Unknown	20

Professor Jeffcoate considered that one of the greatest advances of recent years had been the recognition that certain deficiency states could cause pruritus vulvae—for example, lack of vitamin A, B complex, and iron and liver factors. Probably 20% of cases were due to these deficiencies. He had details of 46 women with pruritus vulvae who had histamine-fast achlorhydria. They had been treated with dilute hydrochloric acid by mouth, and iron preparations when necessary, but no other general or local treatment. The results were:

Cured	34
Slight relief	1
Unknown	4
No response	7

The 34 cured cases were followed up, and it was found that 25 had permanent relief for one to eight years; one patient died of intercurrent disease; two were not traced; six had relapsed and did not respond to further treatment.

The most important part of the management of pruritus vulvae was a thorough investigation to find the cause. A careful history and full physical examination were required as well as (1) repeated examination of *fresh* vaginal swabs for trichomonas, *Oïdium albicans*, and other fungi; (2) a fractional test meal; (3) full examination of the blood; (4) a glucose-tolerance test; and (5) biopsy of vulval skin in selected cases. He concluded by stressing that even in the present state of knowledge a definite organic cause, amenable to treatment, could be found in not less than four out of every five women who complained of pruritus vulvae. In no more than 5% of cases was it impossible to give relief by one means or another.

Dr. G. A. GRANT PETERKIN (Edinburgh) pointed out that when a dermatologist diagnosed pruritus vulvae it indicated that there was no skin condition present to account for the itching, so that the case was either gynaecological or fell into the so-called "idiopathic" group, in a proportion of which the itching appeared to be entirely due to psychological causes. He thought that the highest incidence occurred between the ages of 30 and 39, and not, as was often thought, after the menopause. It was prudent to remember that venereal diseases could cause pruritus vulvae. He listed other conditions which might be responsible for pruritus.

Condylomata acuminata, when itching might precede the appearance of the warts by several weeks. Podophyllin resin was effective in these cases.

Flexural psoriasis, for which tar and ultra-violet light were best.

Lichen planus, which was often mistaken for leukoplakia, was best treated by the heavy metals, perhaps aided by *x* rays.

Lichen sclerosus et atrophicus was even more frequently diagnosed as leukoplakia. Carcinoma did not arise from the vulval lesions in this disease. Some cases responded well to prolonged treatment with stilboestrol ointment.

Contact dermatitis might be due to quinine pessaries, rubber contraceptives, clothing, medicated toilet-paper, sanitary towels, and even nail-varnish. The commonest cause of all was one of the myriad antipruritics prescribed, especially cocaine. The acute case responded well to treatment with starch poultices and Castellani's paint.

Drug eruptions—for example, those due to phenolphthalein and the sulphonamides—might cause pruritus.

Circumscribed neurodermatitis (*lichen simplex chronicus*) and the *asthma-eczema* group should be treated with crude tar, *x* rays and thorium X, or cod-liver oil and hydrochloric acid.

Flexural infective eczema could be cured by 1% gentian violet, and for *follicular infective eczema* treatment by means of a penicillin spray gave good results.

Fungus infections were due either to true ringworm or to yeasts, and were often found in diabetic patients. It had been pointed out that 18% of healthy women harboured monilia in the gastro-intestinal or genital tract. For fungus infections one of the best antipruritics was undecylenic acid.

"Idiopathic" cases, Dr. Grant Peterkin concluded, formed a group in which focal sepsis was often an important factor, as also were emotional and anxiety states.

Dr. C. J. MACKINLAY (Glasgow) said that monilial pruritus vulvae affected three groups of patients: the diabetic, the pregnant, and an "idiopathic" group in which no factor could be shown to be responsible for the continuance of the infection. Diagnosis was difficult, and he suggested that no gynaecologist should accept the diagnosis of a Grade I flora (Schroeder), particularly in cases of pruritus, unless swabs had been cultivated on Sabouraud's medium and had failed to grow colonies of fungus. A direct film stained by Gram's method might be most deceptive, as the fungus could assume a form morphologically indistinguishable from Doederlein's bacillus. Treatment by "mycil" pessaries and jelly had given satisfactory results.

Dr. ELIZABETH HUNT (London) said she had never seen a case of "idiopathic" pruritus vulvae. Pruritus was a symptom, not a disease. In her experience psychogenic causes were rare. She thought that "dettol" baths headed the list of irritants. She reviewed 88 cases referred to her for pruritus vulvae from January to June, 1949. The vulva only was affected in 34% of these cases, and in 4% the vulva was not affected at all. General constitutional diseases accounted for 20%, local affections 25%, skin diseases 50%, and other causes 5%. The present-day excessive carbohydrate diet might influence the condition.

Dr. E. LIPMAN COHEN (London) did not believe there was always just one cause for a disease. He thought the psychogenic factor was often primarily responsible in cases of pruritus vulvae.

Dr. F. F. HELLIER (Leeds) thought there was a lot of nonsense being talked at present about vitamin deficiencies.

Dr. S. T. ANNING (Leeds) was sceptical about monilia causing colpitis.

Dr. BRIAN F. RUSSELL (London) said that psychogenic factors were most important. He believed that there were true deficiency states due to dietetic fads.

Dr. MURIEL KEYES (Harrogate) said many women were disinclined to go to their doctor when complaining of vulval itching. She stressed the importance of urethral disorders as a cause.

Others who took part in the discussion were Dr. A. BARKER (East Kent), Dr. G. A. HODGSON (Cardiff), Dr. S. L. NAVARATNAM (Colombo), Mr. J. A. CHALMERS (Inverness), Dr. S. SMITH (London), Dr. W. H. BROWN (Glasgow), Dr. H. R. VICKERS (Sheffield), Dr. A. FRENCH (London), and Dr. J. T. INGRAM (Leeds).

Summing up, Professor JEFFCOATE thought that all were agreed that pruritus vulvae was a symptom and not a disease. Vitamin deficiencies could exist without demonstrable deficiencies in the blood. Some 25% of women were carriers of trichomonas, and he wondered if this infection was not often spread in hospital wards.

SECTIONS OF RADIOLOGY AND CARDIOLOGY

Thursday, June 30

Angiocardiography

The Sections of Radiology and Cardiology combined for a discussion on "Angiocardiography," Sir JOHN PARKINSON presiding over the first part of the meeting and Dr. J. L. A. GROUT over the second. Sir John Parkinson said that this was the first occasion on which a Section of Cardiology had been arranged, and the cardiologists were glad that their first meeting should be with the radiologists, to whom they owed so much. They were also proud that one of their members, Dr. C. W. Curtis Bain, should be President of the Association.

Dr. FRANCES GARDNER (London) said that angiocardiography afforded a clearer understanding than had hitherto been possible of normal cardiac anatomy. In her department they had collected a small series of normal angiocardiograms in different age groups taken in the three standard positions used in fluoroscopy, and in addition to their educative value they had provided a useful standard for comparison with abnormal films. She proceeded to give a lantern demonstration of angiocardiograms in the normal child and adult and showed their value in the recognition of specific aortitis and in the differential diagnosis of aortic aneurysm and mediastinal tumour.

Perhaps the most striking contribution which this procedure had made to modern cardiology was in the realm of cyanotic congenital heart disease. The surgical procedures in this condition initiated by Blalock in the United States and by Brock in this country called for accurate anatomical diagnosis. The first concern in considering suitability for operation was to exclude those cyanosed patients in whom the pulmonary blood flow was adequate or increased. Here angiocardiography might only confirm the clinical diagnosis, but it might also add some useful anatomical details. Many abnormalities were included in this group, and for some of them surgery was contraindicated. The practicability of increasing the blood supply to the lungs depended on the presence of both right and left pulmonary arteries, and only by angiocardiography could this be determined with certainty.

Dr. J. WILKIE (Sheffield) sketched the earliest attempts to outline the cardiac chambers, culminating in the use by Robb and Steinberg of 70% "diodone." Many devices had been evolved for enabling a rapid series of radiographs to be taken. The most likely appeared to be some development of cine-radiography. He described a rotating cassette holder capable of giving six exposures at intervals of about 1 second. The position of the patient during examination was important. The arm must be maintained in proper relationship to the trunk during injection. Adults were examined under full sedation; children under general anaesthesia (cyclopropane). In the latter case a second injection could be made, provided an adequate interval was allowed between the two. Timing of the exposure intervals was correlated with the side of the heart which was suspect. He discussed possible dangers of the procedure, and referred to one isolated fatality. All possible care should be taken in the selection of cases, and the information likely to be obtained should be of sufficient value to justify the risk. He demonstrated the radiographs of four cases—coarctation of the aorta, complete transposition of the great vessels, Fallot's tetralogy, with early and late filling of the aorta, and pulmonary stenosis with an atrioseptal defect and rudimentary right ventricle.

Dr. K. D. KEELE (London) demonstrated the value of angiocardiography in seven cases, all in children with congenital defects. He described the history and signs in relation to the appearances in the angiocardiogram. In a case of patent interventricular septum, for example, the angiocardiogram showed filling of the right and left ventricles in 2 seconds, both remaining filled for 6–8 seconds. In a case of congenital heart block and patent ductus arteriosus the antero-posterior view showed a normal right auricle and right ventricle, poor filling of the left ventricle, small aorta, the pulmonary fields remaining filled for 8–10 seconds, and pulmonary clonus not filled at the same time as the aorta, while the left anterior oblique view showed patent ductus arteriosus. In a case of patent ductus arteriosus the angiocardiogram showed refilling of the left pulmonary artery from the aorta and, on an oblique view, a small localized dilatation of the inner wall of the descending arch of the aorta. The ductus was ligated, and an angiocardiogram repeated five weeks later showed now no refilling of the left pulmonary artery from the aorta, and the localized aneurysm of the inner wall of the descending arch of the aorta was larger than previously.

Dr. T. H. HILLS (London), whose paper was read in his absence through indisposition, said that Guy's Hospital had been fortunate in that a large number of cases in the cyanotic group had been investigated before operation, and the radiological findings had been checked in the operating theatre and at times in the post-mortem room. Angiocardiography was a dangerous investigation in this group, and should not be undertaken solely to confirm a diagnosis in a patient not suitable for operation. About 90 cases had now been *x*-rayed at Guy's. However well established a clinical diagnosis of Fallot might be, the thoracic unit at Guy's was not prepared to consider operation without this investigation. He discussed the technical requirements for the investigation. The films must be large enough to include the vessels of the neck, accurately timed so that correlation of the rate at which the chambers of the heart filled was possible, and taken at such intervals that there was not too great a difference between any two consecutive pictures in the series. Both antero-posterior and oblique views were of value, but if the diagnosis was in little doubt, and it was desired that the risk of a second injection be avoided, the antero-posterior view should be preferred. The oblique view, however, was desirable in a case of supposed ductus or a transposition. He went on to mention a number of points in the interpretation of angiocardiograms.

Dr. F. JACKSON (London) discussed present trends in North American clinics. Angiocardiography had been used at 157 different hospitals in North America, and in some 6,000 examinations. Three main methods were used: cassette-changing method, the continuous roll of *x*-ray film, and photofluorography, in which the fluorescent screen was photographed. At Mount Sinai Hospital, New York, where the greatest number of angiocardiograms had been taken (over 1,500), a gravity machine with electrically operated release was used. The continuous roll method had been developed at the Toronto Children's Hospital and at Ann Arbour. More rapid exposures could be obtained in this way, and many workers believed that the exposures made rapidly during the critical two or three seconds after injection revealed information not given by slower methods. It was believed that there could not be too many exposures in the early seconds. Photo-fluorography was difficult, chiefly because the fluorescent screen emitted only a small fraction of the energy falling on it as actinic light, and he did not think this method would provide a solution, at any rate for some time to come.

The subsequent discussion was chiefly concerned with the dangers of the procedure. Dr. FRANCES GARDNER mentioned some additional points. Some children had been examined while under sedation only, and she did not think that if the sedation was heavy enough the children suffered. Dr. J. WILKIE, on the other hand, insisted on general anaesthesia for children. Dr. F. JACKSON said that at Mount Sinai there had been no death in the 1,500 examinations, and this compared well with Johns Hopkins, but at the latter hospital a great number of very serious cases had been investigated. Dr. G. M. HAYWARD (London) said that at St. Bartholomew's, where between 50 and 60 angiocardiographic examinations of children had been carried out, anaesthesia was used, and, moreover, it was insisted that a most expert anaesthetist be employed, usually the anaesthetist who would act at the subsequent operation. Sometimes the patient might be under the anaesthetic for 1½ to 2 hours. There had been no fatalities, and since the use of sedation had given place to anaesthesia these cases had caused much less anxiety. Dr. F. T. FAULKNER (London) said that there had been two fatalities among the cases at Guy's. The first was after gas-and-oxygen anaesthesia, which was unsuitable, and the second was in a case where two injections were given, the second one to take an oblique view, with only 20 minutes' rest between the two. Cyclopropane was the anaesthetic of choice.

SECTIONS OF CHILD HEALTH AND PREVENTIVE MEDICINE

Thursday, June 30

Behaviour Difficulties in Childhood

Overseas visitors at this combined meeting included Lieut.-Col. J. W. REGAN (U.S.A.), Dr. E. H. CLUVER (South Africa), Dr. P. MORAN (Eire), Dr. I. C. YUAN (World Health Organization), and Dr. R. E. ANDERSON (Malaya). The chair was taken by the president of the Section of Preventive Medicine, Professor R. H. PARRY (Bristol) and later by Professor W. S. M. CRAIG (Leeds).

Dr. MILDRED CREAK (London) commented on the controversial nature of the subject and emphasized the need for attention to the preventive aspects of work at child-guidance clinics. She stressed the importance of history-taking and the dependence of successful treatment on lengthy first interviews. There should be closer contact between children's physicians and psychiatrists. An almost insoluble problem was that arising from the unwillingness or inability of parents to make necessary adjustments to the presence of children. Emotional problems could be traced to tension and conflict, which might be at the conscious level or might consist of influences carried over from deeper levels. Prevention could begin in the antenatal stage and be continued during the puerperium. "Rooming-in arrangements," which found favour in American maternity hospitals, were to be commended. They helped the mother to learn what her child wanted and they tempered the attitude of the staff.

One result of the small families of to-day was that adolescents learned little of home life and acquired only a limited experience of children. In our modern way of living, home-making and parentcraft came low in the list of priorities. The effects of the war years were evident among children who did not know their fathers in their earlier years. There was evidence that persisting problems were most common in children who had been evacuated and particularly in those who were evacuated when very young. There was a danger in removing a child from the emotional attachments of his home at certain stages in development. Divorce resulting in loss of a parent was a growing problem as a cause of difficulty in adjustment in children. Short periods in hospital could produce profound disturbances. Aggression in a child in hospital or at school might be a healthy attitude providing evidence of readiness to face and grip new problems.

Speech, reading, and number concepts had an orderly pattern of development. Confusion occurred on returning to school after an absence. Hospitals, she thought, should provide some form of educational help.

Dr. Creak referred to the unique opportunities possessed by welfare clinics if time was spent on first interviews; the importance of not being too ready to sacrifice a mother's warm care of an only child in order to place the child with others of his own age: and she urged the closer association of staffs of hospitals and school health services. More people were having fewer children, and so the child was in danger of being offered greater freedom in a world less ready to receive him. Physicians must try to reinforce the ties inherent in stable family life.

Professor C. W. VINING (Leeds) gave "spoiling" as the most common reason offered for behaviour problems. In fact attempts to avoid spoiling a child might give rise to unhappiness. Behaviour problems more often than not were the result of the imposition of a parent's will. The child needed love and affection from those looking after him. Forcing produced rebellion, negativism, and insecurity, where what was wanted was the promotion of courage, confidence, and freedom. Obedience to repressive measures was neither lasting nor natural. Single incidents did not have prolonged disturbing effects, whereas persistence in a parental attitude not understood by the child did. Spoiling might take many forms, including exaggerated anxiety, undue concern about happiness and well-being, and excessive interest in the natural bodily functions of the child. Most children attending hospital clinics were not suffering from underlying physical disease. The doctor must not encourage a wrong attitude in the child by too long a period in hospital, severance from education, or prolonged convalescence. The importance of behaviour problems must not be exaggerated. These problems had wide implications related to common sense, public health, and education.

Dr. W. S. MACDONALD (Leeds), who was introduced to the Section as a family doctor, justice of the peace, and chairman of a juvenile court, referred to children reflecting their parents, to the influence of the mother being vital, and to the importance of the father being limited only by the amount of security he could give the mother. The tempo as well as the scale of juvenile delinquency was on the increase. Only 1% of all children became delinquents in a court sense, and in these cases only 10% called for action in the home. Delinquency was eight times more common among boys than among girls. A point of unquestionable importance was the religious point of view characterizing the family background. Too much emphasis could be attached to physical defect. Low intelligence engendered a desire in the child to push himself forward if his school was unsatisfactory. Frustration developed and behaviour problems resulted.

Dr. MacDonald urged that education authorities should give the same attention to emotional stability as to intellectual advancement. The general practitioner should aim at enabling people to do without the doctor; and the mother should aim at keeping her child away from the child-guidance clinic. Child-guidance clinics should keep the child away from the juvenile court. Future preventive measures should pay special attention to girls of school-leaving age, too few of whom were conscious of the part they would play in the character formation of their children in the years ahead.

Dr. D. HENDERSON (York) drew attention to the important part to be played by the family doctor in prevention, and recommended closer linking of the child-guidance with other child-health services. Certain published assessments of the extent of the problem of behaviour disorders had probably exaggerated the real problem.

Dr. A. A. E. NEWTH (Nottingham) pointed out that as early suspicions about child guidance were being dispelled a balanced outlook was being established. Contact between hospital physicians and parents was to be encouraged. So also was a closer liaison between school health and hospital services. Psychiatric treatment for the child and the parent should not be undertaken by the same organization. Better treatment facilities for children were required. The influence of school on the child was not fully appreciated. Schooling might give rise to difficulties, but more frequently served as a valuable corrective to the feeling of insecurity due to tension in the home.

Dr. MARGARET LOWENFELD (London) said that children should have the reasons for their admission to hospital

explained to them; that greater importance should be attached to the place of food in the imagination of the child in hospital; and that new hospital design should take more account of a child's psychological needs. The view that religious bodies and local education authorities should take a more active part in tackling delinquency was advanced by Dr. H. SUGARÉ (Leeds). The point was made by Dr. CHARLOTTE NAISH (York) that the family doctor should aim at establishing an attitude of understanding friendship towards the mother, utilizing the opportunities of general practice to further education for health. Dr. D. D. PAYNE (Harrogate) suggested that reference of pupils to a child-guidance clinic should be by the school medical officer. There was need on occasion to protect children from teachers who were enthusiastic about psychology and ready to refer too many children for examination. Organic disease was considered to be a common source of behaviour problems by Dr. W. N. LEAK (Winsford). Dr. F. P. H. BIRTWHISTLE (Barton-on-Humber) argued that children should be told what they should do and not what they should not do, and stressed that threats of correction did more harm than good if not followed by action when indicated.

Dr. P. MORAN (Eire), contrasting the position in his own and in this country, attributed the existence of behaviour problems to an ever increasingly complicated social structure, to emphasis on group existence to the detriment of family life, to failure to appreciate the advantages of isolation, and to lack of emphasis on moral and religious considerations.

Summing up, Dr. CREAK agreed that newer ways of thinking involved risks of a wrong conception that ideologies might replace humble belief in ourselves. She said the value of the father in a child's life was derived from the adventuresomeness and the loving authority of his personality. She gave a reminder that where there was a choice the average person preferred to be physically ill rather than emotionally ill.

Tuberculosis and other Conditions in Childhood

In the afternoon members of the Child Health Section paid a visit to Scotton Bank Sanatorium, where Dr. VINCENT RYAN (Knaresborough) demonstrated an interesting series of patients and radiographs.

OTO-RHINO-LARYNGOLOGY

Thursday, June 30

Nasal Allergy

With the president, Mr. A. B. PAVEY SMITH, in the chair, Mr. R. R. SIMPSON (Hull) opened a discussion on nasal allergy. He gave figures showing the incidence of the condition, and thought that the apparent increase was really due to increased recognition of it. It was merely a local manifestation of a constitutional condition. Treatment should be fundamental and not simply a local palliative. The characteristic nasal picture was described, and compared with that of so-called sinusitis. Nasal polypi were predominantly allergic in origin; 97% of his cases showed marked eosinophilia.

In non-seasonal allergy skin tests were of some use in children, but not in adults.

Specific desensitization was sometimes satisfactory, if temporary, in children, but useless in adults. He discussed the antihistamine drugs, and nicotinic acid given in addition. Local applications to the nose should be isotonic with the nasal secretions and not over 1% in strength. He deprecated ionization, cautery, sclerosing injections, and *x*-ray treatment. Radium was useful only for the prevention of recurrent polypi. Surgery had little or no place in the treatment of non-infected cases.

Professor R. B. HUNTER (Dundee) described the effects of antihistamine drugs in perennial vasomotor rhinorrhoea. All cases studied had allergic mucosa diagnosed by biopsy, and the standard of cure was the return of mucosa to normal, again as judged on biopsy. All cases were first given dummy tablets for 14 days. During this period 5% were cured. Of the remaining cases, 54% were cured after one month's treatment with "anthisan," and nearly two-thirds of these were still symptom-free after 15 months. It would be well worth while to try to estimate the amount of histamine present in nasal biopsies and determine whether this was in direct proportion to the number of eosinophil cells present.

Mr. J. GERRIE (Aberdeen) discussed allergy in children, which had been increasingly recognized by paediatricians in the last decade. Unfortunately the general public still expected the condition to be cured by removal of tonsils and adenoids. It was important to diagnose and treat allergy in the early stages, and to avoid all treatment which might tend to add infection. He stressed the importance of family history and past history.

A small biopsy was the most reliable diagnostic aid. In treatment general measures were proper sleep, exercise, light and airy clothing, and avoidance of the specific allergen. He had found non-specific desensitization quite valueless and specific desensitization good but troublesome. For local treatment cauterization had given the best results, followed by breathing exercises for a month. Elixir of "benadryl" was useful, and "anthisan" in older children. Operations should be performed only if there was infection, or if there was obstruction by adenoids.

Dr. LEON UNGER (Chicago, U.S.A.) disagreed with Mr. Simpson on the value of skin tests. He thought that 50% to 70% of cases of perennial allergy gave a positive skin reaction, particularly to house dust. He divided cases into three groups: (1) seasonal, due to pollens; (2) seasonal or perennial, due to fungi; (3) perennial vasomotor rhinorrhoea. Three factors were present: (1) constitutional, usually hereditary; (2) contributory, such as fumes, dust, temperature change; (3) exciting allergens. The presence of more than 4% of eosinophils in the cell count of nasal smears was diagnostic of allergy.

Treatment should be preventive, and by desensitization. Probably 75% to 80% of all so-called "sinusitis" was due to allergy. Purulent material from sinuses should be stained and examined: it might then be found full of eosinophils. House dust probably contained some specific factor, the dust from bedding and upholstered furniture being much more potent than that from carpets. Local nasal treatment should not be prolonged. Antihistamine drugs were of some value. Surgery should be reserved for cases of marked polyposis, severe septal deviation, sinus infection, and septic tonsils and adenoids.

Dr. H. HENDERSON MOLL (Leeds) thought that non-seasonal vasomotor rhinitis was often not allergic, but caused by nervous and non-specific factors. Allergic rhinitis, however, was a frequent accompaniment of allergic asthma, and the changes observed in the nose reflected the general allergic condition. Allergy was suggested by the age of onset (under 40), by a positive family history, and, in a high proportion of cases, could be confirmed by skin tests. Nasal polypi occurring with asthma usually pointed to an infective factor. They occurred in an older age group, and were normally associated with infective asthma. The effect of administering para-amino benzoic acid, 100–500 mg. every two hours during the day, was described.

Dr. D. R. BELLETTY (Assam), as a sufferer from nasal allergy, described the failure of submucous resection, followed by improvement later with desensitization and the use of a vaccine. Mr. A. S. DE B. COCKS (Adelaide, South Australia) thought that in house-dust allergy skin tests were positive in almost all cases, and that polypi were usually of allergic origin. Dr. S. F. L. DAHNE (Reading) found that in cases of so-called catarrh or nasal obstruction about 20% of adults and 25% of children were allergic. Dr. J. G. REED (Malaya) asked if varying nasal obstruction was due to allergy. Had any serious side-effects been produced by antihistamines? Was there any scope for psychiatric treatment in children?

Mr. R. SCOTT STEVENSON (London) deprecated the suggestion that operations were harmful, and stressed the importance of the surgeon's deciding whether an operation was indicated. Nothing gave more satisfactory results than submucous resection in the proper case. Dr. KATE MAUNSELL (London) asked if the combination of antihistamine drugs with desensitization was harmful. Dr. S. DEBONO (Malta) thought that any surgery would give temporary relief, but that the condition would recur. Therefore it was best avoided.

Mr. E. R. GARNETT PASSE (London) said he did not find that sympathectomy or excision of the sphenopalatine ganglion had any effect on vasomotor rhinitis. Mr. PAVEY SMITH (Harrogate emphasized the importance of prevention. The duration of efficacy of antihistamine drugs was not known. Increased incidence of polypi among farm workers seemed to be associated with the increased use of dusty chemical fertilizers.

Mr. SIMPSON said in reply that points which should be noted were the appearance of the turbinates, the presence of the clear secretion, small uninfected tonsils, and normal tympanic membranes, together with a past and family history of allergy.

SECTION OF OPHTHALMOLOGY

Thursday, June 30

Eye and Skin

Dr. JAMES FISON (Harrogate), president, was in the chair, and, during the afternoon, Mr. A. B. NUTT (Sheffield), vice-president. Mr. J. H. DOGGART (London), opening a discussion on ophthalmology in relation to diseases of the skin, pointed out some of the ways in which the two specialties overlapped. He deprecated the overtreatment of styes, but emphasized the importance of not neglecting blepharitis. Maladies which implicated the outer coat of the eyeball were considered, with special reference to ocular rosacea, pemphigus, and other vesicular diseases. He also discussed skin lesions associated with disease of the anterior uveal tract, with cataract, and with fundus disturbances, illustrating his remarks with pictures.

Dr. ALICE CARLETON (Oxford) discussed the vesico-bullous diseases, some of which were known to be caused by viruses. Although wide variations in severity were encountered in practice, and although the immediate or precipitating factor was by no means constant, yet the pathological changes in the epidermis were essentially the same in that group of conditions. The term " aphthosis " had been advocated to embrace such vesicular eruptions, and it would appear that, under the influence of certain noxious stimuli, liquefying epidermal cells released enzymes which interfered with the mechanism of carbohydrate metabolism, so that the tissue was asphyxiated.

Dr. I. B. SNEDDON (Sheffield) stressed the association of ocular and dermal abnormality in disorders of development as well as in allergic reactions. It was important to search for localized dermatitis of the legs or other remote regions in cases of unexplained blepharitis. He emphasized the part played by endogenous and exogenous toxins in the production of that disorder. His own clinical experience strongly supported the generalizations made by Klaber and Wittkower (*Brit. J. Derm. Syph.*, 1939, **51**, 501) on the typical personality of patients with rosacea.

Dr. N. MCALISTER GREGG (Sydney, New South Wales) supported the principle of therapeutic simplicity, and testified to the value of hydrogen peroxide and liquor tinctorium in the treatment of blepharitis. Mr. A. G. CROSS (London) suggested that it was far easier to cure one particular attack of blepharitis than to prevent recurrence of this condition. Mr. A. G. PALIN (Bristol) advocated cleansing of the eyelids twice daily with a face-flannel as a precautionary hygienic measure, but Mr. DOGGART subsequently pointed out the dangers of using a piece of material so liable to be contaminated. The unfavourable influence of septic teeth and seborrhoea of the scalp on the eyes and the eyelids was emphasized by Mr. H. M. JAY (Adelaide). Mr. H. G. W. HOARE (Newport, Mon.) mentioned certain disadvantages of penicillin therapy.

Scleromalacia Perforans

Mr. H. V. INGRAM (Newcastle-upon-Tyne), discussing scleromalacia perforans, said that the association of that rare disease with polyarticular arthritic disturbance was not invariable. He reported two cases, one of which had derived benefit from operation. Dr. N. H. ASHTON (London), who had collaborated with Mr. H. V. Ingram in the investigation of his material, raised the question whether there might be a relationship between scleromalacia perforans and certain cases of brawny scleritis.

Angiomatosis Retinae

Mr. A. G. CROSS (London), discussing angiomatosis retinae, briefly surveyed various congenital and acquired conditions which might simulate the von-Hippel–Lindau syndrome. Only a minority of cases would display the complete range of intracranial and visceral lesions in association with the characteristic ophthalmoscopic changes. The latter consisted of localized tumours supplied and drained by enlarged vessels, together with exudates near these masses, or at the macula, or in both situations. Both eyes were affected in about one-third of the cases, and multiple tumours were often evident. Familial incidence had been repeatedly noted. As angiomatosis retinae was a progressive disease, early treatment was necessary. Diathermy and radiotherapy often gave the best chance of arresting it. In neglected or unsuccessfully treated cases retinal detachment usually supervened, and was accompanied or followed by uveitis, complicated cataract, and finally phthisis bulbi. Haemangioblasts, which were the characteristic cells, were capable of forming solid cords as well as elaborate reticulations and adventitious vessels, and the outer walls of the arteries leading to angiomatous retinal masses were usually thickened.

Mr. A. J. BALLANTYNE (Glasgow) referred to the difficulty of distinguishing between retinal arteries and veins in advanced cases of von-Hippel-Lindau's disease. Dr. N. H. ASHTON (London) asked Mr. Cross whether he had ever seen malignant metastases arising from these retinal tumours. Mr. Cross replied that he had not.

Watery Eye

Mr. N. P. R. GALLOWAY (Nottingham), vice-president, emphasized the multiplicity and variability of the nerve supply to the lacrimal glands, and reviewed the physical, chemical, and emotional factors which could influence the flow of tears.

Mr. DOGGART and Dr. N. MCALISTER GREGG cited examples of lacrimation being provoked by various foodstuffs. Dr. Gregg also pleaded for early probing in cases of infantile mucocele of the tear sac. Mr. R. I. T. LLOYD (Bradford) suggested that the long course taken by the fifth and seventh cranial nerves, together with their variable relationship to the sympathetic filaments, obscured the problems of lacrimal secretion. He hoped that light would be thrown on the question by further research into the functions of the hypothalamus.

SECTION OF PREVENTIVE MEDICINE

Friday, July 1

Pregnancy and Tuberculosis

With Dr. R. H. H. JOLLY (Wolverhampton), vice-president, in the chair, a discussion on marriage and pregnancy in relation to tuberculosis was opened by Dr. F. A. H. SIMMONDS (South Mimms). He said that a wide range of opinion existed as to possible risks to the partner; it depended on how far latent lesions were included in surveys. The influence of poor social and economic circumstances was paramount. Probably there was a really, but not excessively, higher incidence of the disease in the consorts of the tuberculous. Married women in general had more favourable mortality rates for tuberculosis than single women. Women whose disease was controlled should not be refused permission to marry. Investigation showed that patients with the disease quiescent who became pregnant remained as well as other women of the same age and circumstances; where active disease was present, no convincing evidence was obtainable that pregnant patients fared worse. Artificial termination of pregnancy was not without its dangers; it should be employed with care and discrimination only when strong indications were present in the individual. In general, patients should be instructed to avoid pregnancy till the disease had been quiescent for two years at least. Marriage and children had a vital place in normal life for a woman and should not be forbidden except for the strongest reasons. The well-being of tuberculous patients depended much more on their natural and acquired resistance, on their economic and hygienic circumstances, and on their happiness in personal relationships than on the prevention of marriage and pregnancy.

Dr. R. C. COHEN (Braintree) said that provided adequate supervision and treatment were available the results confirmed the view that there was no evidence that pregnancy, labour, and the puerperium had any harmful effect on the course of tuberculosis. It was doubtful whether there was a strictly clinical justification for termination of pregnancy, though social factors might justify such a measure.

Dr. JEAN HALLUM (Birmingham) said that tuberculous women, even with severe lesions, gave birth to healthy but often premature babies. Stillbirths were not increased. When prematurity was allowed for, the figures for neonatal deaths showed no increase. The total infant mortality, however, was high (105 per 1,000 live births), the chief cause of death being gastro-enteritis, with which was associated the high prematurity rate, lack of breast-feeding, and risk of infection attached to residential nurseries. As regards the mothers, primigravidae fared worst, especially when the lesion was not diagnosed before pregnancy.

Dr. C. J. STEWART (Colindale) said that exceptionally a patient might be allowed to become pregnant. Prognosis was little different between pregnant and non-pregnant cases. Some deaths and relapses occurred after delivery.

Dr. E. D. IRVINE (Dewsbury) criticized the suggestion that termination of pregnancy might be justified because of social difficulties—present or future. It indicated a failure in public care, and not least in the health service. Dr. H. J. TRENCHARD (Harrow) said that the risk of infection depended more on the resistance of the healthy consort (i.e., tuberculin-negative reaction) than on any other factor. Dr. D. I. MART (S.E. Essex) asked what advice should be given to a tuberculous married woman if she was anxious to have children.

Dr. R. C. COHEN (Braintree) replying to Dr. Irvine, said it was difficult to justify artificial termination on purely clinical grounds. Any strain there might be after delivery was largely due to worry, extra work, or financial anxiety. It was possibly the duty of the State to help in that respect. The possibility of infection in domestic workers suggested that they should be tuberculin-tested. In reply to Dr. Mart he advised against pregnancy in active cases and until after two years' quiescence.

Dr. F. A. H. SIMMONDS (South Mimms) in replying stressed the importance of using all known preventive measures to control the risk of infection to those in contact with tuberculous persons—affianced, consorts, domestic helps, and children. These included routine radiological examination of contacts, tuberculin-testing of infants, children, and young adults, and, when available, the use of B.C.G. vaccination. In the meanwhile removal of babies from the tuberculous environment was important; breast-feeding was permissible only when the disease in the mother was proved quiescent.

Recent Developments in Influenza

With Dr. D. D. PAYNE (Harrogate), vice-president, in the chair, Dr. C. H. ANDREWES, F.R.S. (Hampstead), read a paper on recent advances in the diagnosis and treatment of influenza. Laboratory diagnosis of influenza, he said, was unimportant from the point of view of treating the individual patient. However, it was vitally important to identify the causative agent of outbreaks in order to help our understanding of epidemiology and prospects of control. Recent diagnostic methods included (1) isolation of the virus from throat washings, (2) haemagglutination tests, and (3) complement-fixation tests. The two former had to be done on pairs of samples taken in the acute stage and again in convalescence. Vaccines of high potency could be obtained by purifying and formolizing virus grown in fertile eggs. Their efficacy in preventing influenza had been proved where a homologous strain of virus was concerned. It was not only a question of the two influenza types A and B; there were serological races within the A group differing sufficiently to affect the results of attempts at prophylaxis. Strange antigenic types of virus might spread from one country to another. The epidemiology of influenza must therefore be studied on a world-wide basis.

Dr. J. E. CAUGHEY (New Zealand) said that in Auckland they had had an epidemic of influenza which started 18 months ago. The diagnosis had been established by serological tests with antigen (A and B) received from Professor Burnet. Both A and B strains had been present and in some cases A and B combined. There had been four deaths, and the secondary invaders in these cases had been penicillin-resistant strains of *Staphylococus aureus*. Four cases had presented as primary atypical pneumonia.

MEDICAL PHOTOGRAPHY

EXHIBITION IN LONDON

An exhibition of medical photography by members of the Medical Group of the Royal Photographic Society of Great Britain was opened at the Society's headquarters of 16, Prince's Gate, London, S.W.7, by Sir Cecil Wakeley, chairman of the Medical Group, on July 4. The exhibition is open from 10 a.m. to 5 p.m. until July 16. The accompanying photograph (taken by E. V. Willmott, F.R.P.S.) shows one side of the exhibition room. The first exhibition arranged by the Medical Group was held a year ago, and it is hoped that next year's exhibition will include photographs from members in the Dominions and Colonies.

At this exhibition the emphasis is mainly on the clinical appearance of a lesion, though there are many fine photographs of pathological specimens, such as No. 85, "Aortic Valves in Rheumatic Carditis," from the Manchester Royal Infirmary.

Another interesting photograph from the same hospital is No. 93, "Rheumatic Tendon Nodules." Among the many good photographs illustrating clinical appearances are the following: No. 21, "Acromegaly," and No. 23, "Osteoclastoma of Hard Palate," from the Middlesex Hospital; No. 22, "Squamous-cell Carcinoma of Tongue," from the Royal Cancer Hospital; No. 10, "Clubbing of Fingers," from St. Bartholomew's Hospital; No. 11, "Psoriasis of Nails," from the Westminster Hospital; No. 18, "Nodular Tertiary Syphilis," from St. Mary's Hospital; No. 40, "Mediastinal Obstruction" (an infra-red photograph showing venous congestion), from the Postgraduate Medical School; No. 67, "Acid Erosion of Teeth," from the Manchester Royal Infirmary; No. 96, "Osteomyelitis—Cross Leg Skin Flap," from the Royal National Orthopaedic Hospital. These are only a few of the 150 exhibits.

Photographic Assessment of Therapy

There are some conditions which it must be hard for a photographer to record, but very realistic results can be achieved—for example, two photographs of the skin in avitaminosis (No. 89, by Dr. A. C. Roxburgh, and No. 94, from the Postgraduate Medical School). A method of using photographs to assess progress during therapy is illustrated in No. 47, "Spondylitis Ankylopoietica," from the Manchester Royal Infirmary. About fifty of the exhibits are coloured transparencies. Three new motion pictures are also included in the catalogue of the exhibition: "A Case of Gross Involuntary Movements," by Mr. C. E. Engel; "The Multiple Pressure Technique of Vaccination," by Dr. B. Stanford; and "Ankylosing Spondylitis," by Dr. P. Sattin.

Reports of Societies

FUTURE OF MEDICAL OFFICERS IN THE FORCES

At a meeting of the United Services Section of the Royal Society of Medicine on June 28, Sir HENRY TIDY presiding, a discussion took place on the professional future of the medical officers of the fighting forces.

Air Marshal P. C. LIVINGSTON, opening the discussion, briefly outlined the personal qualities that the successful Service medical officer should exhibit at different stages in his career. Surgeon Commander P. G. BURGESS, R.N., said that the naval doctor now obtained some experience in treating women in the W.R.N.S. and children in the families of Service men, but he required more help to keep his professional knowledge up to date. He suggested there was a place for the non-specialist on the staff of naval hospitals, and that specialists should give teaching rounds in the wards and out-patient departments for the benefit of medical officers in port. After his initial commissions at sea and in a shore establishment the young surgeon lieutenant should spend a period in a naval hospital; if he proved his ability, he should have the chance to study for higher degrees.

Speaking for the Army, Major A. D. YOUNG said there must be considered first the requirements of the Service, and secondly the ambition and ability of the individual officer concerned. The general duties officer was as essential to the Service as his specialist colleague, for he achieved familiarity with military administration, tactics, and planning. Major Young suggested the early selection of suitable general duty officers for training for future staff rank.

Group Captan F. E. LIPSCOMB maintained that the general duties medical officer must be afforded certain opportunities. He should be able to render useful service to the R.A.F. as a doctor; to lead a professionally satisfying life; to reach a position of responsibility, authority, and reasonable reward; and on military retirement to compete for employment on an equal footing with other doctors. He added that all careers in a fighting force must be subordinated to a primary aim of that force: the preservation of health in readiness for war. The general duties officer should be encouraged to widen his professional experience and to take greater responsibility in treating his own patients without frequent reliance on the specialist. Group Captain Lipscomb thought that medical administration should be regarded as a specialized subject which could provide a career for many general duties medical officers. It was impossible to offer a full career in clinical medicine in any Service for a non specialist.

Surgeon Lieutenant-Commander L. D. ARDEN, R.N., pointed out the disparity in the recognized value of the general duties medical officer and the specialist. He thought conditions of service could be improved and the officer should take a course and an examination before promotion to the rank of Surgeon Lieutenant-Commander.

Major J. C. BABBAGE said the general duties medical officer was the general practitioner of the Services; he should hold a definite tenure of appointment as a regimental medical officer and attend courses in professional and military subjects. Early specialization among medical officers should be discouraged.

Squadron Leader J. B. LOUDON proposed that conscription of medical officers should be abandoned in favour of the enlistment of more regular officers.

Surgeon Commander T. CRAWFORD said that the administrator, as well as the specialist, must be trained for his post.

A comparison between the lives of a doctor in the fighting forces and his civilian counterpart was made by Major A. BENNETT. He said that the Service medical officer enjoyed a congenial life with opportunities for travel, and regular hours of work. He had ample equipment for treating his patients, and consultants were always available. He also had the chance of postgraduate specialization. The civilian doctor, on the other hand, could expect more family life, a greater variety of clinical medicine, and higher remuneration.

Surgeon Lieutenant-Commander J. GLASS suggested a programme of training for the general duties naval medical officer during the first 15 years of his service. He said that the first course should be held on entry to the Service. It should be concerned with naval organization and health problems. The second course, to be taken after five to eight years' service, should last for nine to 12 months; it should consist of a study of medicine, surgery, public health, administration, and marine medicine. After 12 years' service further instruction should be given to qualify the officer for the rank of surgeon commander. This should resemble the second course, but with emphasis laid on administration. A final course in recent advances in medicine should be held after 15 years' service.

Sir HENRY TIDY, summing up, said that the Services must make the best of the medical officer of average ability as well as the better man. The general duties medical officer would benefit from hospital appointment early in his Service career, and should be offered repeated opportunities for postgraduate study (not necessarily with the aim of his becoming a specialist) to preserve his interest in clinical medicine. He should be allowed to retire if he saw no chance of his advancement after the age of 35. Sir Henry added that it was impossible under present conditions to abolish the conscription of medical officers.

BRITISH ORTHOPAEDIC ASSOCIATION

The spring meeting of the British Orthopaedic Association was held at Nottingham on April 22 and 23. The papers were presented at Nottingham University; the clinical part of the meeting was held at Harlow Wood Orthopaedic Hospital. The value of the meeting was enhanced by the presence of five Canadian and ten American orthopaedic surgeons who were paying a six-weeks visit to orthopaedic centres in this country. Those from Canada were Drs. F. P. Patterson (Vancouver), W. B. McKinnon (Winnipeg), F. P. Dewar (Toronto), R. Gariepy (Montreal), and J. A. Leo Walker (Montreal), and from the U.S.A. Drs. J. H. Allan (Philadelphia), C. B. Larson (Boston), L. R. Straub (New York), Hugh Smith (Memphis), S. B. Fowler (Nashville), B. E. Obletz (Buffalo), J. J. Fahey (Chicago), W. H. Bickel (Rochester), V. T. Inman (San Francisco), and D. W. Blanche (Los Angeles).

Upper Limb

Dr. VERNE T. INMAN (San Francisco, California) illustrated experiments showing that elevation of the upper limb involved rotation of the clavicle about its long axis, and that fixation of the clavicle to the coracoid prevented elevation above shoulder level. In eight patients the clavicle had been completely excised without loss of function, except that holding things above the head required extra effort. This operation was suggested as an adjunct to arthrodesis of the shoulder for joint disease.

Mr. TOM ROWNTREE (London) considered anomalies in the innervation of the hand muscles, referring to 688 cases of median- and ulnar-nerve lesions treated at the Wingfield-Morris Orthopaedic Hospital, Oxford, and at the Royal National Orthopaedic Hospital, London. Cases with known complete axonal division had been accepted—102 of median-nerve lesion and 124 of ulnar-nerve lesion. The observations were checked in a few cases by procaine block of the unaffected nerves. The lumbricals were ignored because of the difficulty of assessing their power, and flexor pollicis brevis was described as one muscle. Of these subjects 33% showed the innervation ordinarily described in the textbooks, the median nerve supplying abductor pollicis brevis, opponens, and flexor pollicis brevis, and the ulnar supplying adductor pollicis, the hypothenar muscles, and all the interossei. The flexor pollicis brevis had a purely ulnar supply in 32% and a clinically demonstrated dual (median and ulnar) supply in 16%. The normal arrangement was, therefore, that abductor pollicis brevis and opponens were supplied by the median nerve, and the adductor pollicis, interossei, and hypothenar muscles by the ulnar; the supply of flexor pollicis brevis was variable and probably usually dual. An anomalous supply was found in 20% of patients, including some with complete

median innervation and some with complete ulnar. In a few cases procaine nerve block had demonstrated an anastomosis between ulnar and median nerves in the forearm. These results emphasized the fallacy of diagnoses based on muscle power alone.

Dr. S. BENJAMIN FOWLER (Nashville, Tennessee), discussing the extensor apparatus of the digits, stated that the extensor communis tendons had no insertion into the proximal phalanges of any functional significance. The inability of extensor communis to extend the interphalangeal joints of the claw hand depended upon hyperextension of the basal joints. If these had capsules tight enough to prevent hyperextension in cases which otherwise would show claw hand the interphalangeal joints could be actively extended by the long extensor tendons.

Mr. R. G. PULVERTAFT (Derby) demonstrated tendon surgery in the hand with a motion picture. Among the procedures shown were shortening of the dorsal expansion in old cases of mallet finger, repair of the boutonnière lesion of the extensor expansion, tendon transplantation of extensor indicis proprius for rupture of extensor pollicis longus, suture of divided flexor tendons of the fingers, and their replacement by tendon grafts.

Mr. DAVID TREVOR (London) described five cases of spontaneous rupture of extensor pollicis longus tendon after Colles's fracture treated at intervals of one week to five months after rupture. He had bridged the inevitable gap with No. 6 nylon (non-capillary) sutures. Good union had occurred. The sutures had been removed three months or more after operation. Rupture was ascribed to aseptic necrosis from ischaemia. Mr. BRIAN L. MCFARLAND (Liverpool) suggested that ischaemic changes in the tendon might be caused by strangulation in the pulley opposite Lister's tubercle.

Mr. E. MERVYN EVANS (Birmingham) put forward clinical and experimental evidence that the anterior Monteggia fracture was caused by a combination of forced pronation and longitudinal compression of the forearm. In full pronation the radius and ulna crossed in contact, and continuing forced pronation would break the ulna near its middle and prise the radial head forwards out of its joint. Closed reduction by supination had succeeded in nine out of eleven cases. Mr. F. W. HOLDSWORTH (Sheffield) confirmed Mr. Evans's observation that "compounding" of this fracture was always forwards. He treated children conservatively, but in older people the ulna might be plated. Excision of the radial head gave bad results. Sir REGINALD WATSON-JONES (London) said that one form was clearly due to direct injury—the "baby-car" fracture or, as the Americans more picturesquely put it, "the side-swipe" fracture. There might still be a place for plating the ulna, but not for open reduction of the radial head. Mr. W. SAYLE-CREER (Manchester) doubted whether supination alone would maintain reduction, which was sometimes prevented by the rent capsule.

Lower Limb

Mr. P. C. ELMES (Oxford) had analysed the results in 115 cases of fractured neck of femur treated by closed nailing and followed up for two years or more. The clinical results were good in 35 cases, fair in 42, and bad in 38; in three of these repinning was successfully carried out, in six unsuccessfully. Anatomical results were estimated in 61 cases radiographed more than two years after operation. Sound bony union had occurred in 39 cases, but nine of these showed ischaemic necrosis with collapse of the femoral head. Established non-union was found in 22. In men fractures of the femoral neck were as common before 55 years of age as after, but in women they were much commoner after that age.

Mr. R. C. MURRAY (Inverness) discussed the classification and results in 100 consecutive patients with trochanteric fracture of the femur treated conservatively by simple weight traction combined with a medial-rotation bandage, early movement being encouraged. Ten patients, aged over 80, died. The anatomical results in the others were: excellent 33; good 29; fair 21; bad 7. The functional results were: excellent 25; good 42; fair 14; bad 9. Apart from patients who had already had spastic paralysis before fracture, the fair or bad results had been mainly due to prior osteoarthritis of the hip. With ordinary nursing skill conservative treatment was best.

Mr. WILLIAM GISSANE (Birmingham) referred to 44 consecutive patients, of an average age of 75, with trochanteric fractures treated by the Capener–Neufeld nail. Of the 32 who had completed treatment 31 had a normal or excellent range of movement in hip and knee.

Dr. L. R. STRAUB (New York) gave the results in 80 cases of lumbo-sacral fusion by Dr. Philip Wilson's method, in which metallic fixation was combined with the Hibbs procedure supplemented by bone chips, both autogenous and from the "bank." One patient had died of post-operative shock. Of the remainder, 69 showed solid bony fusion on radiological examination in various positions at the end of six months; failure in five had been at the lumbo-sacral joint, and in five at a higher level. Recently, metallic fixation had been combined with a cortical graft, and 25 patients out of 27 had shown solid fusion. Among 103 patients treated without metallic fixation there had been three deaths and 29 failures.

Mr. J. ROLAND HUGHES (Preston), discussing the radiological diagnosis of recent lesions of the lateral ligament of the ankle, recalled that avulsion of a bony flake was exceptional, but diagnosis of ligamentous injury by radiography of the ankle with the foot inverted was now well established. He had carried out this examination on 90 consecutive injured ankles and 90 normal ankles. About 6° of tilt represented the transition from normal to abnormal. The lateral ligament was lax with the ankle plantar-flexed and tight with it dorsi-flexed. In the cadaver, important tilting did not occur until the anterior talo-fibular ligament was cut, and the capsule also as far as the lower limit of the articular surface of the talus. Tilt through 30° was then possible. These ligaments were torn by a movement of plantar flexion combined with rotation about the medial malleolus. If tilting occurred through 18 or 20° or more there must be rupture of the anterior talo-fibular ligament, the calcaneo-fibular ligament, and the intervening capsule. The anterior talo-fibular ligament was the first to give way.

Mr. J. GRANT BONNIN (London) considered that tilting up to about 15° indicated rupture of the anterior talo-fibular ligament; 15–30°, the calcaneo-fibular ligament also; more than 30°, all three parts of the ligament. It was important to radiograph the opposite talus, which could be tilted about 4° in 10 to 15% of cases.

Mr. NORMAN W. ROBERTS (Liverpool) discussed osteochondritis dissecans of the elbow. The condition was almost confined to the male, was commonest under the age of 15, and affected both elbows in perhaps a quarter of cases. A diffuse cystic change was frequent. The loose bodies, if detached, were much more often multiple; irregular or ragged lesions were commoner than in the knee. The radial head was usually enlarged, and premature epiphysial fusion might occur. An association with preceding injury was difficult to establish. Radiographs of cases of loose bodies in the elbow very often revealed flattening of the capitellum and pronounced enlargement of the radial head, evidence of an unsuspected origin from osteochondritis dissecans rather than from osteoarthritis, which was often a complication rather than a cause. Mr. H. JACKSON BURROWS (London), said that the presence of bone in the separated fragment was important in distinguishing between osteochondritis dissecans and chondromalacia, which was often mistaken for it.

Professor J. DELCHEF (Brussels), discussing nerve-root pain of vertebral origin not dependent on disk prolapse, emphasized that such conditions as apophysial sprain were real entities and that arthritis of the posterior articulations might be an important cause of sciatica of single root origin. Mr. J. R. ARMSTRONG (London) recalled that the first sacral root, the most frequently affected, was unrelated to a posterior joint, and furthermore that sciatica was not usually relieved by arthrodesis. Almost all cases were due to intervertebral disk lesions.

At a special meeting a transatlantic club was formed, to be known as the A.B.C. Club, representative of its American, British, and Canadian members. The main function of the club is to facilitate similar visits in the future and to concentrate, as far as possible, the work and material to be seen.

BIRMINGHAM AND MIDLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY

At the Birmingham Medical Institute on March 31 the final meeting of the Midland Obstetrical and Gynaecological Society was held under the chairmanship of the president, Mr. W. E. BARNIE-ADSHEAD. It was decided to wind up this society and to found a new society to be called the Birmingham and Midland Obstetrical and Gynaecological Society. Professor HILDA LLOYD was elected president, Mr. H. C. MCLAREN is the secretary, and Mr. SAMUEL DAVIDSON the treasurer.

Mr. H. R. DUVAL, Mr. L. M. PARK, and Mr. A. WENTWORTH TAYLOR were also elected as additional members of an interim committee to formulate the rules of the society.

Dr. C. E. PURSLOW, who was the first secretary of the former society in 1912, was invited to become an honorary member. It was also decided to invite former members of the old society to become foundation members of the new society. An informal luncheon was held at the Queen Elizabeth Hospital, after which the members proceeded to a clinical meeting in the Medical School. Two papers were read: one by Professor HILDA LLOYD and Messrs. W. E. BARNIE-ADSHEAD, P. J. GANNER, and C. W. TAYLOR on "Masculinizing Tumours with Pregnancy Following Their Removal," and another by Mr. H. C. MCLAREN—"Control of Menopausal Symptoms by α-Tocopherol."

SCOTTISH SOCIETY OF THE HISTORY OF MEDICINE

On June 18 a party of members of the Scottish Society of the History of Medicine made a pilgrimage to places of interest in connexion with four sons of Scotland famous in the annals of medical history. Dr. Douglas Guthrie, president of the Society, led the party, which visited the grave and library of William Smellie at Lanark. Thereafter homage was paid to the memory of David Livingstone when the Livingstone Memorial at Blantyre was visited. The party then went on to the farm of Longcalderwood, East Kilbride, near Glasgow, which was the birthplace of the brothers William and John Hunter.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY

The president, Mr. S. B. HERD, of Liverpool, took the chair at a meeting of the North of England Obstetrical and Gynaecological Society held in the Royal Victoria Infirmary, Newcastle-upon-Tyne, on June 17.

Mr. H. HARVEY EVERS described a case of melanoma of the cervix in a spinster of 62 who had complained of slight pink "spotting" twelve years after the menopause. The patient had an atrophic vagina, which made examination difficult, but under general anaesthesia a small vascular shallow ulcer without pigmentation was seen on the vaginal cervix. Unexpectedly this was shown on section to be a melanoma. The patient made an uninterrupted recovery following a Wertheim hysterectomy.

Mr. BRYAN WILLIAMS gave an account of a case of full-time ectopic pregnancy delivered at laparotomy a month after the death of the foetus. The placenta was not removed, and severe haemorrhage was controlled by oxidized cellulose.

Miss C. M. GREY reported a case in which a granulosa-cell tumour of the ovary was associated with an adenoacanthoma of the body of the uterus and was successfully treated by radical operation. Mr. S. MADDEN described a case of chorionepithelioma arising from the Fallopian tube in a patient who had previously had a tubal mole. Finally Mr. T. G. ROBINSON discussed the value of pre-operative penicillin in combating uterine and extra-uterine infection in cases of carcinoma of the cervix.

INTERNATIONAL BOOK EXHIBITION

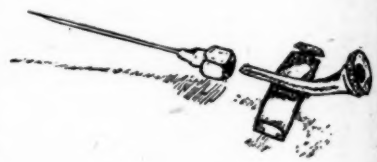
It would be fair to say that British book production can compete with any in the world. In Oslo, for example, British books—and British medical books in particular—make a magnificent showing in the bookshops surrounding the university. Yet a visit to the National Book League's Third International Exhibition of Book Design, on view till July 23 at 7, Albemarle Street, London, W.1, gives the impression that British books are sorry things. This is certainly not due to the amount of space given to them, which is greater than that given to any of the other countries exhibiting. But it is very difficult to see on what basis the selection of books was made. The art books look very well, though not so well as they deserve; the children's books are also good. Other sections fall far below standard, and technical books are extremely badly represented. There are no medical books as such, but there is one on biological assay, the general appearance of which is ordinary. Other countries have included in their more limited number of exhibits excellent technical books, and beautifully produced medical textbooks are shown by Norway and by Holland. The price of admission, 2s. 6d., may put off the casual visitor; the catalogue is extra.

Preparations and Appliances

AN IMPROVED GORDH NEEDLE

Dr. F. L. ROBERTSHAW, Obstetric Registrar, Moorgate General Hospital, Rotherham, writes: The British version of the Gordh non-clotting intravenous needle was described in the *British Medical Journal* (1947, **2**, 834). Briefly, it consists of a needle to which is attached a rubber diaphragm. Injections are made through this diaphragm, which prevents reflux of blood into the needle, the latter remaining patent even after a few hours in a vein. The device is especially useful in techniques involving repeated injections of thiopentone and curare, since it avoids the need for an intravenous drip or repeated venepuncture.

As at present supplied, however, the Gordh needle suffers from two drawbacks. First, the needle is too big for small veins, so that haematomata may result from attempts to use it. Secondly, it must frequently be resharpened if it is to enter veins easily. To overcome these drawbacks I have modified the usual Gordh needle by removing the original needle and fitting in its place a standard Record needle fitting. Any needle can now be fitted to the device and replaced when blunt. I have found a size 15 hypodermic needle most useful: with this the device is equally suitable for young children and smaller veins. In addition, the venepuncture can be carried out either with an unmounted needle or with one attached to a syringe, and the device attached when the needle has been well placed in a suitable vein. All the advantages of freedom from clotting are retained, and in addition the smaller needle reduces the risk of haematoma and a sharp point is always available.



The original modification was made by me from a standard Gordh needle and a Record fitting derived from an old one-way tap. The instrument here illustrated has been made by Blease Anaesthetic Equipment, Ltd., 223/227, St. John Street, London, E.C.1. Thanks are due to Mrs. C. Ballantine for the accompanying diagram.

The Ministry of Transport has recommended that a sulphonamide dressing for burns and wounds be included in the Merchant Shipping Medical Scales instead of the picric acid dressing.

Correspondence

Mind, Machine, and Man

SIR,—I feel sure that all of your readers must have been as fascinated as I was by Professor Geoffrey Jefferson's Listerian Oration on "The Mind of Mechanical Man" (June 25, p. 1105). Here we have an example of medical philosophy at its best, for it is a philosophy with its feet firmly on the ground. Perhaps one of the most fundamental points to which he draws attention in comparing the brain with the modern computing machine is the tremendous difference in complexity—ten thousand million brain cells as compared with twenty thousand valves of the American or one thousand of the more economical English machine—factors of 500,000 or 10,000,000 respectively.

To think of, say, a million such machines (the coverage area would give the Ministry of Town and Country Planning cause for anxiety) all properly integrated is beyond the imagination of my 10,000,000,000 cells. But the actual disparity would be much greater than this, for it appears that the brain cell, unlike the electronic valve, is capable of responding to more than a single type of stimulus—e.g., electrical, chemical, physical, and so on. To all of these and their combinations and permutations a nerve cell may react, and so the factors given above must be still further increased. Even if a supermachine were constructed in the future capable of responding to other than electronic impulses, the lecturer reminds us that it would have no self-consciousness, no ego, and so would not be a brain in the truest sense. Those holding completely mechanistic views concerning the relationship between brain and mind would nevertheless probably agree that this shortcoming is more than a mere question of greater, but similar, complexity. Our perception of our own consciousness remains a riddle to-day, despite all the thought that has been given to it throughout the ages.

But so far I have been using your valuable space for a simple paraphrase of Professor Jefferson's remarks, and this was not my intention. I think the lecture provides an analogy to, and a warning concerning, certain tendencies which we see all around us. I was particularly impressed by the author's repeated admonition that we should not allow ourselves to be led away by the specious suggestions that here we have in effect a model of the brain in action, and that we should not "anthropomorphize the machine." Rather should we emphasize the great differences (not only in complexity) between the brain and the machine, otherwise we may fall into the error—common enough nowadays—of believing that because we are able to plan, build, and control the machine we are capable of producing a blue-print of the living brain accurate enough to be put to practical use. I have no objection to the production of a blue-print as an academic exercise, but I have the strongest antipathy to any attempt to apply it, in our present ignorance, to the control of human destiny.

I am afraid that my lack of facility in the handling of words has obscured the issue, and so I fall back on a practical example to make myself clear—at least so I hope. The present population of this country is stated to be some 50,000,000 units, which, although much less than the 10,000,000,000 cellular units of the brain, is nevertheless a vast number. Each unit has its own individuality and its own responses to the stimuli of its environment. Each presents a much greater variation of activity than that of an individual neuron. And so our society, considered as a whole, has as much complexity of organization and variability of response (social and political) as the brain has in its particular sphere of action. Yet we have people in no small number who believe that a blue-print of our social and political life can be drawn up, and who furthermore act upon such a blue-print in advocating what is called a planned State. They appear to have no conception that the meagre information and statistics upon which their plans are based bear no more relationship to the complexities and interactions of social life than does the mechanical computer to the real human brain. Would we permit the clever designers of the electronic computing machines, because of their knowledge, skill, and diligence in that field, to control the whole of our psychological and nervous life?

The reason why I have the gravest doubts, both rational and intuitive, of the planned State is that I do not believe we have at present anything like sufficient knowledge of the intricacies and complexities of social behaviour to warrant interference except in the simplest matters. As doctors we have had a good example of the unpredicted effects of the application of planning during the past year. He would be an incorrigible optimist or a bigoted ignoramus who regarded the outcome as anything more than an extremely disappointing exhibition of the unforeseen vagaries of human reaction under changing circumstances. But planners, possibly intoxicated by the magnitude of their plans, seem to see nothing wrong; and in any case humanity is very adaptable—there is always a considerable time lag before the effects of a change are fully felt and appreciated, and collective mankind has a short memory.

Our own profession's problems are, however, only a small part (probably smaller than we are apt to think) of the general problem which now affects the whole nation. Because mankind can successfully plan houses, Mulberry harbours, atomic bombs, and other mechanisms, the planners, with complete disregard of the enormous difference in complexity between even an atomic bomb and the social organization, audaciously step in where angels fear to tread and force us to accept their plans for our happiness, our desires, our ambitions, and the whole of our destiny.

From Professor Jefferson's lecture we learn to regard with great suspicion any attempt to explain the complexities of thought and psychological action by comparing the brain with the infinitely simpler computing machine. Equally we should be supremely cautious in applying our meagre knowledge of simple social reactions to the extremely complex problems of sociology. Surely it behoves us to regard the question with great humility, not with overweening arrogance. Certainly we should hesitate and hesitate again before taking any action based on our theories which will affect the lives of our fellow men. Let us not be lured from our scientific agnosticism by the facile talk of the planners, for they know not what they do.—I am, etc.,

London, W.1. NORMAN C. LAKE.

SIR,—I should like to stress that the problem of whether or not the calculating machine has a mind is fundamentally the same problem as that of whether or not human beings (other than myself) have minds. Each one of us (allow me to assume the problem solved) is conscious only of his own mental processes, and assumes that his fellow beings have minds by analogy of their bodily behaviour with his own, which he knows to be correlated with mental processes.

Let us therefore solve the problem of the machine by constant reference to this older form of the problem, and by asking ourselves what it is in the actions of others that leads us to suppose that minds exist. Space is short, so it remains for me only to state my conclusion after comparing the behaviour of the machine with that of my fellow creatures. I am unwilling to postulate a machine mind, but I do think that this machine provides an excellent teleological argument for the existence of man.—I am, etc.,

Withyham, Sussex. P. DUPRÉ.

The Lock Hospital

SIR,—I have refrained from entering into any controversy concerning the fate of the above, with which I have been associated for forty-two years, but I feel that I must now do so before it is too late. The hospital is not being threatened because it is out of date, inefficient, or no longer required. It is a beautiful modern building, specially built for the purpose of treating venereal disease, and situated in the centre of London, where it is ideally placed for the purpose for which it was intended. It is the largest clinic in the West End, much larger than the clinics of any of the general or special hospitals. Patients come to it because they feel they will be treated with kindness, not as pariahs but as unfortunate, frightened human beings.

It was for their treatment that the subscribers to the hospital originally gave the money to build and equip it, long before the public conscience was roused to the necessity and importance of such treatment. They did not give these subscriptions to acquire honours or distinctions, but for the sake of the unfortunate mothers, innocent children, and foolish youths. They would deeply resent its transference to any other hospital, no matter how worthy of support, as long as the need for venereal treatment existed. An appeal is now being made to the Ministry of Health to stop this retrograde step before it is too late.

Everyone with any knowledge of these diseases, and the mental attitude of patients towards them, knows that Earle Moore, of Baltimore, was dead right when he said recently at the Royal Society of Medicine that one-tenth of the treatment was physical and nine-tenths psychological. I was a house surgeon when one injection of "606" was said to cure syphilis, and I have seen the consequences. I am hopeful we may not make the same mistake again through over-optimism.

I have been deeply touched by the anxiety shown by hundreds of old patients who have been coming specially to the hospital during the last two months, since the first rumours of the possible disaster to what they look upon as their hospital have appeared in the Press. Nobody seems to have thought of them in official circles.—I am, etc.,

London, W.1. J. JOHNSTON ABRAHAM.

Prevention of Sea-sickness

SIR,—With reference to your leading article on this subject (May 14, p. 855), it may be of interest to quote our impressions on the use of "dramamine." We have been reserving it for the cases in which hyoscine has been of little or no benefit. We have found that in almost every case dramamine has caused almost complete disappearance of the sea-sickness. As mentioned in your leading article, it seemed to us that the recommended dose was too high, and we find that 50 mg. twice daily will keep most people happy. We are now trying out 25 mg. doses.

It is, unfortunately, not possible in large, fast passenger ships to carry out controlled experiments, but meanwhile our impression is that dramamine is indeed all that it is claimed to be.—We are, etc.,

S. M. RUST.
R.M.S. Queen Elizabeth. F. W. A. FOSBERY.

Quality of Liver Extracts

SIR,—In recent months there has been some correspondence in the medical press in which it has been stated that the quality of British liver extracts made from "pharmaceutical livers" is inferior to those made from fresh, edible livers. Though none of the correspondence which I have seen gives any detailed evidence in support of the writers' views, it was nevertheless decided to inquire into the matter, as it is clearly one of considerable importance both for the welfare of patients at home and for the maintenance of the good reputation which British pharmaceutical houses have won in the export market.

In the course of discussions which have been held here no evidence could be discovered to substantiate the claim that better liver extracts could be made by using fresh, edible livers than by using so-called "pharmaceutical livers." The following points are worth noting.

"Pharmaceutical livers" is a trade term to cover livers which are tough or not sufficiently fresh in appearance to attract the housewife. It does not include tuberculous livers or those with abscesses, cysts, or other obvious disease, and such livers are not used for the manufacture of liver extract. There appears to be no risk of disease being transmitted to patients through the use of pharmaceutical livers, and in any case the production processes provide effective sterilization.

The vitamin B_{12} content of pharmaceutical livers and edible livers has been measured and no significant difference was found. B_{12} is not necessarily the only factor therapeutically active in liver, but at least this test appears to give a fair measure of the anti-anaemic activity.

It is true that rather wider variations in batches of liver extract are found than is the case with most biologicals, but this is due to the absence of an adequate animal test for standardization. The practice of the British pharmaceutical houses is to standardize their batches of liver by the response of one or two pernicious anaemia cases who have not had prior treatment. As the response of individual patients must vary widely, it will be seen that the standardization is less accurate than would be the case with a test using larger numbers and a "standard" strain of laboratory animals. This limitation, of course, applies equally to liver extracts manufactured in other countries. It does explain, however, how patients may occasionally not give the response which was expected. In such instances an alteration of dosage or change to another preparation will in most cases solve the difficulty.

The recent discoveries of folic acid and of vitamin B_{12} illustrate how little we yet know about the relationship of the liver to the macrocytic anaemias, and my Department would therefore be grateful for any scientific evidence on this matter which would assist in securing even better preparations for the treatment of patients suffering from these conditions.—I am, etc.,

Ministry of Health, London, S.W.1. W. DALRYMPLE-CHAMPNEYS.

Medical Fitness for Air Travel

SIR,—Dr. R. Lane (June 11, p. 1053) rightly refers to the great advantage of air travel to many invalids wishing to return to the United Kingdom for special treatment, and points out that he has sent home from Calcutta a number of patients who would have been excluded had the criteria given in our article (April 9, p. 603) been rigidly followed.

These criteria were given merely as a general guide to medical men for the safety and comfort of their patients on long flights, which are more arduous than Dr. Lane suggests, as even many robust individuals complain of fatigue after a flight from such a distance as Calcutta, and more so on longer journeys like those from Australia, the Far East, South Africa, and South America. Among the factors leading to this fatigue are the early hour of starting and the long hours (8 to 12 daily) of travel in a somewhat confined space at an average altitude of 8,000 to 10,000 feet, which is accompanied by a low but perceptible degree of anoxia. It is for the medical practitioner concerned to decide on the fitness of the patient for the proposed air journey on the general advice given, aided by his own personal experience of air travel and his knowledge of the patient.

The British Airlines' policy is to accept at the passenger's own risk all invalids who are vouched for by a medical practitioner as fit to undertake a particular journey, provided that the invalid's condition is not objectionable to other passengers. It is not true to say that in the case of any ordinary severe illness, provided a few common-sense precautions are taken, the risk to the patient is no greater than in an ordinary hospital bed: the anoxia and lowered atmospheric pressure exert a definite and deleterious effect on certain medical conditions, as outlined in our article. In one type of pressurized aircraft travel can be guaranteed at an altitude no greater than 5,000 feet.

It would be impracticable with the present number of passenger seats available in aircraft to have some of them reserved solely for invalids up to 10 days before the actual flight, but the Corporations' station managers are always willing to consider sympathetically the passage of invalids, including last-moment cases, and the practice is to place them in seats near the lavatory and where their attendants can be alongside them.

At present oxygen is always available for passengers in case of emergency, but when the use of pressurized aircraft becomes general the provision of an adequate oxygen supply will not be so easy, as the seating is arranged on as high a density as possible and the weight factor of several hours' supply of oxygen for each patient would have to be considered. It would not, therefore, be practicable to carry more than one or two patients who might need oxygen during the journey, as oxygen is not laid on in pressurized cabins, and special mobile oxygen apparatus would have to be provided.

Our recommendations were based mainly on Service experience and the known facts concerning anoxia and lowered pressure effects over various lengths of time at different altitudes, and which vary with the individual, depending on his physical condition and psychological make-up. The mortality rates for different diseases per flight cannot be stated, as we are not aware of the nature of every case carried in civil aircraft and as a large number of invalids travel without revealing that they have any disability. Fortunately, however, the annual mortality rate for all invalids carried is very low, owing, no doubt, to the care with which such cases are usually selected for air travel. It is wise to err on the safe side in transporting invalids by air, as it is very disconcerting, inconvenient, and expensive for them to be off-loaded *en route* should they be taken ill.—We are, etc.,

H. E. WHITTINGHAM.
A. BUCHANAN BARBOUR.
J. C. MACGOWN.

London, W.1.

Herpes Zoster Treated with Liver Extract

SIR,—I was very interested in Dr. H. S. Gaskell's article (June 11, p. 1037) on the treatment of herpes zoster by liver extract. It is a treatment I have consistently followed since 1946, when you published a letter from Dr. Hugh Dickie (June 15, 1946, p. 942), who advocated this treatment. The rationale is not very obvious, but I suppose it acts as a general "tonic."

In my list of cases, numbering twelve, there was only one in which there was not a rapid improvement and a very much quicker recovery than is usual in this painful complaint. The one exception was the case of an old lady of 82 who had other troubles, of which she died two years later.

The preparation I employ is "anahaemin," and one injection of 2 ml. is sufficient. The relief is rapid and noticed in 3-7 days.—I am, etc.,

JAMES ROOTH.

Brighton.

SIR,—I have read with interest the article by Dr. H. S. Gaskell on the treatment of herpes zoster with liver extract (June 11, p. 1037). In *Paris Médical* (Aug. 14, 1948, p. 370) I gave the results of a few cases treated by 0.5 g. of liver extract; I hope presently to be able to give the results in more than 25 other cases. I can already say that though my results are good they are not as good as those of Dickie (June 15, 1946, p. 942) and Gaskell. This might be due to the different liver extract I have used.—I am, etc.,

M. MANSOUR.

Paris.

Treatment of Basal-cell Carcinoma

SIR,—In reply to Dr. P. A. M. Robertson's letter (June 4, p. 1002) on recurrent rodent ulcers, his experience is all too common. If the recurrence occurs in or adjacent to a previous lesion I think it fair to assume that treatment was inadequate. If the fresh rodent ulcer is in an entirely new site it should be looked upon as unconnected.

Multiple basal-cell epitheliomata are not uncommon. I have recently seen a patient with eleven scattered over various parts of the body, which have been in existence for twenty years, gradually enlarging. They are sometimes quite superficial and occasionally respond even to repeated applications of thorium-X varnish. The fact of multiplicity gives support to the view that these lesions spring up from incompletely differentiated embryonal cells—i.e., they are not carcinomas, not derived from basal cells, but are naevoid tumours.—I am, etc.,

I. P. MYERS.

Brighton.

SIR,—The reasons put forward by Sir Cecil Wakeley and Mr. Peter Childs (April 30, p. 737) in favour of exclusively surgical treatment of basal-cell carcinoma of the skin are hardly convincing. True, surgical excision may be regarded as a good second choice in some cases where an exceptionally skilled surgeon is available, but generally the results are inferior to those of radiation treatment. This has been my experience in a series of over 70 cases. Unless the excision is very wide relapses will occur: for basal-cell carcinomas have a tendency to form advance guards of strands of malignant cells far beyond the limits of the visible lesion.

The authors do not sufficiently emphasize the disadvantages of surgical treatment: unsightly scars; the consequential need of a second, plastic operation; the possibility of keloid formation; stimulation of the growth; and the very real danger of wound infection. None of these may occur if, as said above, exceptionally good surgical workmanship may be counted upon, but potentially they are to be expected after every operation.

Radiation therapy, on the other hand, has been so successful in the treatment of these tumours that a reversal to surgical methods must be regarded as a retrograde step. After all, gamma rays (produced by radium or the *x*-ray machine) have been proved to have a selective effect on the nuclei of tumour cells: their application is a biological procedure—which surgical excision is most certainly not.

In expert hands radiation of basal-cell carcinoma is a safe, clean, painless, and effective method, and in the large majority of cases preferable to surgery. (The late Dr. Sequeira, whose experience in this field was probably unique and with whom I had occasion to discuss the question of radiation or excision, was strongly in favour of radiation whenever possible and feasible.)—I am, etc.,

FRANK PIERS.

Nairobi.

Oestrogenic Effect of Amphetamine

SIR,—The following may be of interest concerning the oestrogenic effect of amphetamine. Eighteen months ago I was treating a patient whose condition was rapidly deteriorating whilst on stilboestrol treatment for prostatic carcinoma. He was mentally depressed and had suicidal tendencies. Following administration of amphetamine (10 mg. daily), not only his mental but his physical condition improved markedly, and he appears to be in considerably better health.—I am, etc.,

T. H. HARGREAVES.

Prestatyn, Flints.

Treatment of Stress Incontinence

SIR,—Mr. Wilfred Shaw (June 18, p. 1070) is to be congratulated for his ingenuity and for his courage in carrying out the pioneer work which together have produced another valuable contribution to vaginal surgery. There is definitely a need for an operation which can be employed where the modified anterior colporrhaphies have failed. It is essential that the operation performed shall not endanger the integrity of the bladder or the urethra, and it is also essential that it shall cure the condition.

Shaw's operations would seem to fulfil these requirements (I use the plural, for it appears that his technique is still undergoing modifications). The disadvantages at first sight are the formidable nature of the undertaking, the drilling of bone, which surgeons (orthopaedists excepted) naturally abhor, and the scar down the thigh. Curiously enough, the patients do not mind the last, and since the vaginal and vulvar incisions are lost sight of the operation, however formidable it sounds in print, leaves the patient with surprisingly little to show for it. We can accept that in 50 cases no instance of osteomyelitis has occurred.

After witnessing the operation, I have myself performed this on seven occasions and have encountered some teething troubles. Six of my patients are cured—the failure was a patient in whom the sling was brought up through the obturator foramina. It is a pity that this will not always do the trick, for it is easier and less formidable (and sometimes succeeds).

Mr. Shaw states that on incising the pubococcygeus "troublesome bleeding rarely occurs." It can do, however, but it is in my experience easily controlled by packing with ½-in. (1.3-cm.) ribbon gauze until the time has come to thread the strap through. I still use the arched incision including the clitoris; I have not found the bleeding here a nuisance, and have not had to drain. One patient has a sinus at the apex of this wound, presumably because I used silk sutures which have not yet separated.

One important point to keep in mind is that the operation will not cure cystocele. In the excitement of carrying through the Shaw operation step by step one can forget this. If the

patient has both conditions, then presumably after taking the strap from the thigh a routine colporrhaphy must be done and the strap threaded through before finally closing the skin.—I am, etc.,

London, S.E.3. KEITH VARTAN.

Toxic Effects of Antistin

SIR,—I was interested in Dr. Maurice Tobias's account of a case of poisoning by "anthisan" (June 18, p. 1098). I should like to record another case of overdose of an antihistamine substance, which did not, however, result in death.

The patient was a man, aged 46, who took about 20 tablets of "antistin" (2-N-phenyl-N-benzyl aminomethylimidazoline), while intoxicated, at 2 a.m. According to his wife, he lost consciousness within a few minutes of taking the drug, and his face became a dark red colour. He vomited profusely, and when seen by his doctor the following morning he was semi-comatose. He was sent to hospital, and on arrival was unable to answer questions, relapsing into stupor when left undisturbed. No abnormality was found in his tendon jerks. Plantar responses were flexor. Pupils were constricted. A well-marked "triple response" was obtained on scratching his skin. After gastric lavage his condition improved a little, but he remained drowsy for two days in spite of small doses of amphetamine. On the third day he was much better, and was fit for discharge on the fourth day.

It would appear that the toxic effects of antistin are entirely cerebral and resemble those of "benadryl," but that a larger dose is required to produce them (2 g.) with the former than with the latter drug.—I am, etc.,

London, S.W.1. HUMPHREY HAHN.

Zoster and Varicella in the Same Patient

SIR,—I was interested to read Dr. A. Courts's account (June 11, p. 1052) of the co-existence of herpes zoster with chicken-pox. I believe these cases are very rare.

In 1933 I attended a man aged 55 who had severe shingles of the third division of the fifth cranial nerve on the left side. His wife had had a mild shingles of the angle of the mouth a short time before. His was a severe attack with a temperature of 101° F. (38.3° C.). Three days later, after his temperature had fallen, it rose again to 102° F. (38.9° C.); he was acutely ill and developed a typical varicella rash. Recovery was complete in three weeks.—I am, etc.,

Purley, Surrey. C. E. TAYLOR.

Treatment of Cardiospasm

SIR,—Innumerable different operative procedures have been devised to treat cardiospasm. Some have produced no benefit, some have been completely successful, and some have created a worse condition which has ended fatally.

The aetiology of cardiospasm remains unknown. No satisfactory operation has yet been performed on the nerve mechanism controlling the cardia to overcome the spasm. The most successful results of treatment have been obtained by disrupting the circular muscle fibres which are in spasm. This may be carried out by dilatation with the Negus hydrostatic bag, or at operation by dividing the muscle fibres. When operation has become necessary, there are a few most important facts to which I should like to draw attention.

In a normal person the gastric contents are prevented from regurgitating into the oesophagus by two main mechanisms: (1) the action of the cardiac sphincter; and (2) the pinchcock action of the diaphragm. Any operative procedure which is embarked upon to cure cardiospasm must necessarily interfere with the first of these, but it is of the greatest importance to preserve the second—i.e., the pinchcock action of the diaphragm.

If both of these mechanisms are damaged by surgery a patulous cardia results. This produces oesophagitis and eventually peptic ulceration of the oesophagus, which is a worse condition and more difficult to deal with surgically than cardiospasm. The operation of oesophago-gastrostomy should only be mentioned in the treatment of cardiospasm to be condemned. It certainly relieves the obstruction at the cardia, but it creates a dangerous and killing anomaly, for there is nothing to prevent gastric juices regurgitating into the oesophagus. I know of at least one fatality from haemorrhage following this operation, which came from peptic digestion of the oesophageal wall.

In Leeds, a modified Heller's operation has been performed on those cases which did not respond to dilatation with the Negus hydrostatic bag. This is a safe operation, for it does not interfere with the pinchcock action, and post-operatively there has been no regurgitation into the oesophagus. It has given excellent results both symptomatically and radiologically the seventeen times it has been performed. It is the operation of choice, because other operative procedures, altering the cardiac mechanism, may prove to be dangerous.—I am, etc.,

Leeds. G. H. WOOLER.

Treatment by H 11

SIR,—I enclose leaflets on H 11 which I received by the penny post. You will note there is nothing to show who is the sender of these leaflets. I would like to protest strongly against this method of advertisement of a treatment for such an important disease as cancer.

In 1943 H 11 was tried out in a case of bronchial carcinoma. The patient was in a large chest hospital. All facilities were offered to the Hosa Laboratories for the investigation and treatment of the case personally, but these were refused. H 11 was tried out by the medical staff of the hospital, but the treatment failed and the patient died.

I make my protest as I feel that it is most undesirable that hopes should be raised of a cure of cancer.—I am, etc.,

Dorking. P. H. PHIPPS.

Treatment of Thyrotoxicosis

SIR,—The issue of the *British Medical Journal* of April 16, 1949, has only recently come to hand in this part of the world, and the remarks made by Sir Heneage Ogilvie (p. 645) regarding thyrotoxicosis in his otherwise excellent address, "In Praise of Idleness," are by no means in accord with one's experience here nor with that reported from Canada and the U.S.A. The intelligent use of thiouracil and its derivatives in acute thyrotoxicosis has completely revolutionized the treatment of this condition and is paralleled only by the introduction of the antibiotics in other spheres of general medicine.

I have published several articles in the *Medical Journal of Australia* principally on the use of methyl thiouracil in long-term therapy in the acute primary type of toxic goitre, and in a series of 120 cases treated with thiourea and thiouracil and another series of 200 cases treated with methyl thiouracil the results show complete control of the thyrotoxicosis with restoration to normal health and recession of the gland in 80% of cases. In a further 10% there was control of thyrotoxicosis, but an enlarged gland persisted. Recurrences were under 5% and always occurred in the latter class, so now all such cases are subjected to operation. The other 10% for various reasons were operated upon, several because of some sensitivity to the drug, others because they would not or could not carry on with prolonged treatment, and others again for cosmetic reasons.

All the cases have been followed for a minimum period of six months after concluding treatment, and many for two to five years, without recurrence. In addition all secondary cases of thyrotoxicosis associated with old colloid or adenomatous goitres are subjected to short-term therapy until the toxic condition is under control, and then operation is carried out. In this class I now have close on 500 cases.

The figures quoted by Sir Heneage Ogilvie are deplorable, and if they are the average of English experience then it is high time the methods of therapy in vogue should be reviewed and altered drastically. In the 800–900 cases personally treated or under treatment since the "thio" compounds were introduced in 1943 I have had two cases of agranulocytosis—one in the early days and one where a patient developed an acute pyelitis and was given large doses of one of the sulphonamides by her local doctor. Slight reactions have been noted in only 3% of cases, and in only 0.5% of cases was treatment stopped because of a febrile reaction or a leucopenia. The mortality rate has been *nil* for the whole series. Seventeen patients have

been treated during pregnancy and delivered safely with normal babies. Quite an appreciable number of woman have had one to three children after concluding long-term therapy without any recrudescence of the thyrotoxicosis, and I regard this as a good test of "cure."

The mortality rate of surgery in expert hands with the iodine regime was 0.25–1%, but the overall general surgical mortality is nearer 5%; and, even so, many cases are only just pulled through after several very anxious days, whereas with the thiouracil preparation there is seldom any post-operative reaction that would worry either the nursing staff or the surgeon. So far my operation mortality rate is nil, and similar large or larger series are reported from the U.S.A.

It seems that the "week's reflection in the relative anoxia of 12,000 ft.," to which Sir Heneage refers, has made him unduly dogmatic in his pronouncements regarding thiouracil, and he has not exercised that personal supervision of his cases and that clarity of thought that one expects from him. He states he has "not drained a thyroid for 10 years"—possibly a safe proceeding in his capable hands, but not wise advice to give the average young surgeon, as a split tube or corrugated rubber drain for 36 hours is safe in certain cases and leaves no reminder.

As regards the "considerably enhanced difficulty" of operation, I find in cases properly prepared there is no greater difficulty with the large hyperplastic glands prepared with thiouracil and iodine than there is with those prepared with iodine alone, while with the adenomatous glands, even in those patients who have been fibrillating, one is freed from worry and strain both during and after operation, as also is the nursing staff. Perhaps the difference in our results is that I personally supervise both the medical and surgical treatment of all my cases, and it is I who decide if and when the patient should be operated on.—I am, etc.,

Sydney. H. R. G. POATE.

Nutritional Macrocytic Anaemia

SIR,—For the record, Drs. J. Rubie and C. D. Calnan (June 18, p. 1079) may like to see the report of a case of megalocytic anaemia in a young vegetarian (April 22, 1944, p. 558). This young man had a severe "pure" anaemia (without skin or mental changes) which responded promptly to "anahaemin." An initial histamine-fast achlorhydria gave place to a spontaneous secretion of free acid 17 months later; and a presumptive diagnosis of pernicious anaemia was finally ruled out of court.—I am, etc.,

Hartlepool, Durham. R. T. COOKE.

Marriage Guidance by Doctors

SIR,—I would refer to the recommendations of the Royal Commission on Population regarding instruction and advice to the public upon sexual life and behaviour, now at last recognized as of paramount importance to the welfare of the nation. While recognizing the overcrowded nature of the syllabus confronting the medical student, I would wish to propose that in the interests of all concerned some room should be made for the training of the aspirant-doctor in the understanding not only of sexual physiology but also of sexual psychology, including the psychological differences between man and woman, the stresses of women's problems, and the use of birth control, not for avoidance of parenthood but for the proper spacing of families.

It is a regrettable fact that at the present time many otherwise excellent G.P.s have a repugnance to giving advice upon sexual problems, even while they can hardly not be aware of the tremendous incidence of troubles of this nature among their patients and their results upon physical and psychological health. Most of these men have acquired a good deal of insight during their years of practice; but there are many who are unable, through not knowing quite how best to approach it, to give impersonal and yet humane advice in such cases.

Since the subject's importance—indeed, its fundamental character—is now for the first time officially noticed, and since it appears that such help and advice may come within the scope of the health services of the State, it would seem that the need for training of young doctors in this direction is both vital and urgent. If doctors, busy and, indeed, overworked as they all are, can rise to meet this opportunity, I feel that they will be well rewarded. A sympathetic understanding of these human problems will go far to strengthen the ties of good will between doctor and patient, confirming ever more strongly the position of the "family doctor" as an essential and honoured part of our social life.—I am, etc.,

London, W.1. EUSTACE CHESSER.

Adoption Bill, 1949

SIR,—Miss Anne Ashley's admirable letter (April 23, p. 725) embodies all the principles the National Council for the Unmarried Mother and her Child works for. Above all, we warmly endorse her insistence on the right and privilege of the mother to take a decision about her child's future "with proper safeguards and never in a hurry." It is for this reason that this council presses for an amendment of paragraph 3, subsection (2), of the Adoption Bill, 1949, which would, as it stands, allow a consent to be given "whether or not an application for such an order is pending." This section provides for a mother to abdicate from her position and to sign away her child directly after birth, thereby possibly depriving her of the responsibility of taking this decision at a later time.

It is these insufficiently considered and hastily arranged adoptions which bring trouble only too often to the mother and to the adopters alike: much careful thought over a period of many years has served to emphasize the importance of the time factor. Experience has shown that doctors not infrequently encourage adoption at this early date, even when the mother herself wants to keep the child. This council urges the medical profession to use its influence to secure the amendment of this clause when the Bill comes before the House of Lords, and above all asks doctors to consider each case on its merits before recommending adoption.—I am, etc.,

LETTICE FISHER,
London, W.C.1. Chairman, National Council for the Unmarried Mother and her Child.

POINTS FROM LETTERS

Zoster and Varicella

Dr. A. F. DUNN CARRIE (Manchester, 15) writes: Some years ago I attended a female child aged 2 years for a typical attack of chickenpox of moderate severity which ran a normal course till the tenth day, when she developed a well-marked herpetic eruption along the distribution of the fifth dorsal nerve on the left side. As is usual in young subjects, the herpes was attended with little discomfort or pain and subsided spontaneously, requiring no treatment other than the application of a dusting powder.

Milk and Rheumatic Fever

Dr. JOHN T. MACLACHLAN (Glasgow) writes: Two years ago I expressed the opinion in the *Journal* (May 31, 1947, p. 784) that rheumatic fever was probably due to milk from infected rheumatic cows. In my opinion this induction will be clinched if pasteurization of milk destroys the infection of rheumatic fever. Some doctors tell me that rheumatic fever seems to be rare. It would be worthwhile making rheumatic fever a reportable disease to determine this very important point.

Horseflies and Poliomyelitis

Dr. RICHARD V. WRIGHT (Coldbeck, Cumberland) writes: During the summer of 1947 I noticed that the blood-sucking horsefly was very prevalent and a nuisance. Recently, swimming in Lake Loweswater, I noticed these blood-sucker flies made the habit of pouncing upon other flies, including the *Musca domestica*, bringing them pick-a-back to ground and then sucking their abdomens. Now the musca has been shown for certain to carry the virus of poliomyelitis in its intestine, and thus the horsefly could be easily infected on its perforating proboscis, and then infect the next mammal it attacks, and so be the vector into the blood of humans. And this would also account for horses being so commonly affected by poliomyelitis during an epidemic, and also for bathers being attacked so readily by the infection.

Medical Notes in Parliament

THE NATIONAL HEALTH SERVICE (AMENDMENT) BILL

A Standing Committee of the House of Commons began on June 28 the examination of the National Health Service (Amendment) Bill (see *Supplement*, May 21, p. 274). On Clause 1, which is concerned with existing partnership agreements and modification of those agreements, Mr. BEVAN moved and the Committee accepted an amendment for the purpose of making clear that the free transfer of one share in a partnership to another person was in fact affected. The words substituted were "in lieu of the payment of the purchase price by the partner to whom the share is transferred."

Mr. WALTER ELLIOT pointed out that there was a difference of opinion between the Government and the Opposition about the number of persons affected by the Bill. The Financial Memorandum accompanying the Bill had estimated that about 50 practices were involved and that the number of doctors concerned was nearly 150. The Lord Advocate had said on the second reading that only one of these was in Scotland. It was the view of the Opposition that a much larger number of persons was affected. The mere stipulation to bring in a new appointed day showed that the controversy which the Bill was designed to clear up affected a very large number of practitioners, possibly half the number in the country who were in partnerships and a very large number of assistants. The Bill dealt with a problem which affected the whole profession and to which the whole profession had taken grave exception.

Sir HUGH LUCAS-TOOTH said that the clause applied to all partnerships in existence on the appointed day. In Subsection (3) it provided that Section 35 of the National Health Service Act which prohibited the sale of medical practices should be deemed never to have affected the exercise under any partnership agreement of any right or obligation of a partner to sell to, or purchase from, another partner any share in the goodwill of the practice. He thought that in the Bill they were arriving at a happy solution of the problem. On the other hand the Government should be asked whether it had any information about the dissolution of partnerships. In was possible that some practitioners had decided that it would be better to dissolve their partnerships before the original appointed day and to recast them in the light of the known defect of the principal Act. If that were so, certain hardships might not be covered by the clauses of the Bill.

Mr. BEVAN replied that how many cases were affected was purely speculative. He agreed that apprehension of the effect of these clauses had been created among a large number of doctors by irresponsible propaganda in 1946 and 1947. The Ministry had no information how many partnerships, if any, had been dissolved as a consequence. Mr. Bevan explained that in speaking of irresponsible propaganda he referred to sensational headlines which gave rise to fears among a large number of general practitioners. The House, however, knew from experience that larger numbers of doctors had joined the Service than had at the time been estimated to be necessary. The number of partnerships affected by this propaganda would be demonstrated by the number of persons coming forward for compensation. He thought they would be very few.

On Clause 3 (right of medical partners to be entered on lists after appointed day) Sir HUGH LUCAS-TOOTH said the period of two months from the date of the passing of the Bill was reasonable, but there would be exceptional cases in which compliance would be difficult. Doctors who had gone overseas or were ill might require a longer period. It would probably have to be at the discretion of the Minister or some outside body.

Mr. BEVAN hoped he would not be pressed on this. It was impossible for the British Medical Association to arrange for the distribution of the compensation fund while the matter was in doubt. The Bill could not be placed on the Statute Book before the end of July, and the Long Recess would follow, so the profession would have ample notice.

On Clause 5 (modification of other medical partnerships in force on the appointed day) Mr. BEVAN moved an amendment having the effect of giving to all members of a partnership to which the provisions of the clause applied the benefits of Subsection (2). He said that as the subsection was worded the obligation of a partner outside the Service to purchase, in pursuance of an agreement in force before the appointed day, the share of a partner who joined the Service after the appointed day was converted into an option, whereas the obligation of a partner who was inside the Service to make a similar purchase had not been so converted. His amendment with the subsequent one would bring the clause into line with other provisions in the Bill which turned an obligation into an option in cases where the purchaser was acquiring something less than he had contracted for and something which, owing to the provisions of the original Act, he could not sell.

Mr. ELLIOT said this could reasonably be regarded as an easement. On the understanding that the Minister had disclosed the whole meaning of the amendment the Opposition consented to its incorporation in the clause. The amendment and the further consequential one were then accepted and the clause as amended was ordered to stand part of the Bill.

On Clause 6 (existing agreements with medical assistants) Mr. ELLIOT said these had scarcely been mentioned in the debate on the second reading. He believed that the number of assistants affected would certainly reach 1,000, and might be 1,300 or more. He took it that all these were covered by the clause. If it were thought that the clause merely applied to the 50 practices which had been referred to, dismay would be created among those whom the Bill was intended to benefit.

The LORD ADVOCATE (Mr. John Wheatley) said that following the recommendations of the Slade Committee the Government proposed to apply the same principles in this Bill to assistants as were applied to partners within a partnership agreement covered by the Bill. He gave an assurance that assistants were included within the clause in the same manner as partners within a partnership agreement. The number of assistants affected was a matter of speculation. Information on that point should have been more readily procurable from the medical profession and medical organizations than from the Government.

Mr. ELLIOT hoped that if at any subsequent stage of the Bill the Opposition brought forward information derived from the professional organization, its submissions would be received in a spirit of sweet reasonableness. The clause was then ordered to stand part of the Bill.

On Clause 7 (removal of hardships) Sir HUGH LUCAS-TOOTH moved to provide that where the arbitrator or committee acting under the powers conferred by the clause modified the operation of the Act of 1946, or of this Act or of any regulations in relation to the provisions of the agreement, it should immediately report such modification to the Minister, who should from time to time lay a statement before Parliament giving brief particulars of all such reports. Sir Hugh said that the power to vary the Acts and the consequent regulations was wide but necessary. It behoved the Committee to see that what Parliament had laid down was effectually carried out. The subsection might enable a coach and horses to be driven through what Parliament had decided. Two or more doctors could conceivably appoint an arbitrator without the knowledge of the Minister or of Parliament and persuade that arbitrator to modify the provisions of the principal Act and of this Bill. The Committee agreed to the amendment.

Prohibition of a Salaried Service

On Clause 10 (prohibition of full-time salaried practitioner service) Sir HUGH LUCAS-TOOTH moved to insert an amendment providing that payment "except in special areas or except where a basic salary had been granted should consist of remuneration ascertained in relation" . . . to the number of patients. Sir Hugh said the words "special circumstances" were in no way defined in the clause, and the words "wholly or mainly" were without a clear meaning. On the second reading Mr. Bevan had been asked whether these words would enable him to provide by regulation for all doctors to be paid up to 49% of their remuneration by way of salary. As the Minister

in his reply had failed to answer that question Sir Hugh thought the Committee must assume this was a fair interpretation of the phrases which he had quoted. They should have a clear statement from Mr. Bevan on what he thought the words meant. The Opposition in the amendment which he had moved and in the following one wished to provide that the remuneration should consist of remuneration in relation to the number of patients, except in the case of special areas and the case in which a basic salary had been granted. In its second amendment the Opposition proceeded to give definition to the terms "special areas" and "basic salary." It was desirable that the Committee should clearly indicate to those who were to be in the Service what the rights and obligations of those in the Service were likely to be. It was unsatisfactory that people should be expected to enter the Service not knowing how far the terms of service might be altered, because Parliament contemplated that a doctor having once entered the Service at the age of 25 would continue to serve until he was 60 or even 70. In the amendment basic salary was defined as being such salary as might be determined by regulations made under Subsection (1) of Section 33 of the Act of 1946 or the corresponding section of the Scottish Act, and the amendment provided that it should only be payable to a medical practitioner for the purpose of making special provision for meeting cases of hardship or otherwise to provide special assistance to particular classes of practitioners. In the section dealing with special areas power was given to the Minister to provide by regulation for any part of a doctor's remuneration up to 100% to be given by way of salary in special areas where entirely special circumstances prevailed. The obvious case was that of the Highlands and Islands. These amendments carried out the desire of members in all parts of the Committee within the meaning of the pledge which had been given.

Mr. BEVAN said he had made it clear again and again during the controversy which accompanied the launching of the National Health Service Act that it was not the intention of the Government to introduce a whole-time salaried service.

Sir HUGH LUCAS-TOOTH: "Not while the fruit is green."

Mr. BEVAN said that when he had talked about the fruit being green he had meant that the ethical standards of many people would have to be raised before they could be trusted to do their job without the application of rewards and punishments. Even in the Opposition amendment the cases to which it should apply were not defined narrowly. "Or otherwise" was as wide a phrase as that of the Bill itself. It was clear that the Minister should be able to pay a young man in the Service a salary of £300, which might amount to more than half his remuneration. It might also be the fact that aged practitioners who were quite useful might have a declining list which would make the basic salary more than half their remuneration. The Opposition did not contest that this might be desirable and necessary. It was also common ground that it might be necessary for salary to be paid in certain areas because the number of people living in that area would not suffice on a capitation basis to reward adequately the general practitioner. What was left was a suspicion that the words in the clause would permit some Government at some time to impose clandestinely on the medical profession a full-time salaried service before they were prepared to accept it. Never was there a more unworthy suspicion or a clumsier way of trying to meet it. Statutory power was not what the Minister required in such circumstances. What was wanted was the willingness of the profession to accept what was proposed, and no amount of statutory protection would deal with that position. Even if the language of the Opposition were put into the Bill a Minister would have exactly the same latitude as was given in the Bill. Sir Hugh had said he thought the language of the Bill gave effect to the pledge Mr. Bevan had offered in the House. Why then was it necessary to refine this language?

Mr. ELLIOT said the Minister was arguing that because the Opposition had made an attempt to meet him and to give latitude which they realized was necessary the case they had advanced could be brushed aside. Mr. Bevan had asked the Opposition to clear its mind of subjective consideration. Medicine was largely a matter of subjective consideration. Many of the chromium-plated figures of modern health administration were not so satisfactory to the patient as one who showed himself sympathetic and anxious to deal with the human problem of a sick man. In all these matters the Opposition was concerned to maintain the human contact between doctor and patient, which tended to be diminished when a vast central organization came into the matter. Mr. Bevan had referred to his efforts to raise the ethical standards of the medical profession.

Mr. BEVAN replied that when he had said that in many professions ethical standards were not yet sufficiently high to exempt them from State assistance and that they therefore could not be trusted with a full-time salary he had not referred to the medical profession.

Mr. ELLIOT said that if the Minister told the Committee that he had been indulging in a poem more suitable for an Eisteddfod than for a committee of the House of Commons the Opposition was willing to let the matter go at that. He suggested that the Minister should raise a flag when he came to one of his general metaphors but lower it when he came to a concrete application. The step-by-step technique in introducing changes was familiar, and the legal maxim of resisting the beginnings was sound. The form in which the Opposition would cast the clause was positive and indicated the line of approach they might take at subsequent stages.

Mr. BEVAN suggested that the language of the amendment was more dangerous than the language of the Bill, because it made it possible to give a decision on hardship and thus to take in classes of general practitioners.

Sir HUGH LUCAS-TOOTH said that if the Minister objected to the words "or otherwise" he was willing to take them out.

Mr. BEVAN said he had no objection to these words, but to the whole amendment.

Mr. ELLIOT said the Minister would not deny that the medical profession would like to have the amendment.

Mr. BEVAN said he had no evidence that the medical profession would like it. He strongly advised the medical profession not to support the amendment, because it was more capable of being misrepresented than was the language of the Bill.

Mr. ELLIOT assured Mr. Bevan that the medical profession considered the amendment a desirable step.

Mr. LINSTEAD said the Minister seemed to be taking powers in the clause as drafted which would enable him, if he thought there were special circumstances, to apply a fixed salary over the whole profession. If that was not the meaning of the Bill then the Opposition had cleared up a point which was in doubt. The suspicion that the profession would be faced with a full-time salaried service resided in the profession, and it was unjust of Mr. Bevan to pin it on to the Opposition. The dental profession was definitely afraid that an opportunity would be taken to introduce a full-time service paid by fixed salary. The value of the discussion that day had been on the one or two additional assurances the Minister had given of the present intentions of himself and his Government.

Basic Salary

Mr. BEVAN said the Opposition pretended it was speaking for the profession and the country. What it was really doing, and had done ever since 1946, was to stir up as much mischief as possible against the National Health Service Act. Sir Hugh Lucas-Tooth was attempting to induce in the mind of every doctor a suspicion of the Government's intention. Over the last two or three years the Opposition had done its best to sabotage the whole of the health service administration. It was time the country knew this. The Committee had before it an innocent clause carrying out the pledge which he (Mr. Bevan) had given to the medical profession. Every doctor understood it clearly. He had received no letters about the clause and did not believe there was any doctor who did not trust the intentions lying behind the clause. Why should he give Sir Hugh a pledge? He was not entitled to it. What was happening had been agreed between the Government and the medical profession. The profession might wish to alter the arrangements, as there was a great deal of doubt in the minds of doctors about the basic salary. With the ordinary administrative machinery at its disposal the medical profession could make the basic salary practically universal. Many doctors

had bitterly complained that the profession itself was withholding the basic salary which they thought they ought to have. What the Ministry had said was that it must satisfy itself that it was dealing with a bona-fide general practitioner. If a person merely put up his plate and said, "I am a general practitioner" and made a claim, then, said Mr. Bevan, he would not pay £300. There had been instances where he had refused to pay £300 because on inquiry he was satisfied that the applicants were not seriously practising their profession. It might easily happen at any time that the profession might come to him and say they would like to have the basic salary universal to all genuine medical practitioners. Until they did so he would not make it universal. That was the only pledge he was prepared to give. He was not prepared to put the whole of the conditions for the payment of the medical profession within a statute so that the Ministry could not move without altering that statute. Beyond the three categories of doctors for whom the basic salary was necessary—the young doctor who wanted to avoid borrowing money at exorbitant rates of interest, the old general practitioner who wanted to continue practising, and doctors in places where the population was too sparse to give reasonable remuneration—it was not in the mind of the Government to introduce a universal salaried service.

Mr. ELLIOT said Mr. Bevan was arguing along two opposed lines. He was saying that he did not wish to alter the conditions and also that he did not like the amendment because it might interfere with him if he desired to alter them. Mr. Bevan's idea was that the whole of the difficulty between himself and the medical profession arose from the arguments introduced by Conservative M.P.s. He should have noticed in the course of his political life that he was capable of stirring up opposition without the support of Conservatives.

Mr. BEVAN: And of dealing with it.

Mr. ELLIOT said Mr. Bevan must not object when the medical profession felt that he should be treated with a good deal of circumspection. The Minister could point to no instance where the Opposition had attempted to sabotage the working of the Act. He assured Mr. Bevan that the Opposition had the support of the doctors on this amendment. Later, on the question of arbitration, the Opposition could refer to the proceedings at the conference of the B.M.A. in Harrogate.

Mr. BEVAN said his recollection was that the Harrogate conference had never raised the question of the basic salaries. The Government had received no communication from the doctors about the clause.

Mr. ELLIOT said he could give an assurance that these matters had been discussed with the representatives of the British Medical Association.

Mr. BEVAN asked whether he was to understand that the Opposition had been in communication with the British Medical Association about the amendment though the Association had made no official representation to the Government.

Mr. ELLIOT recalled that earlier the Minister had said that any such approach had his entire approval and that he would accept it from the Opposition. Naturally the Opposition, as responsible persons, did their best to discuss such matters with other responsible people.

An "Intrigue" with the Opposition

Mr. BEVAN said this was astonishing. They had got to the point where the British Medical Association's representatives carried on an intrigue with the Opposition. Had they got to backstairs intrigues between the Opposition and the medical profession about a Bill before the House of Commons implemented a public pledge given to the House by the Minister of Health? The duty of the British Medical Association, if it thought that the Bill did not give effect to the pledge, was to come to the Minister of Health and say they did not like the words. They had not come.

Mr. ELLIOT said the Opposition had brought forward the amendment entirely on its responsibility as Members of Parliament. The amendment had been advanced after taking counsel, but it was advanced solely on the responsibility and on behalf of the Opposition—not of the British Medical Association. The Opposition had never claimed that it spoke with the support of the whole medical profession. He did say that the medical profession was profoundly suspicious of the Minister. The accusation made by the Minister that the amendment was part of a deliberate attempt to sabotage the health service was not justified by the words and arguments which had been used.

Backstairs Pressure

Mr. BEVAN said the British Medical Association had met his officials on this Bill, but on no occasion had they raised the question of this clause. It was the duty of the Association to raise such issues with the Ministry if they wished to call attention to what they considered to be the inadequacy of the language in the Bill. It was exceedingly difficult for the Government to carry on discussions with responsible organizations if those organizations did not use the channels of communication open to them and used backstairs ways of bringing pressure to bear on Members of the House.

Mr. ECCLES said the point of the Bill, of the clause, and of the amendment was to make the Service work better. The Opposition intended that the amendment would help to make more doctors willing members of the health service. There was no question of the amendment having been put down to exacerbate the doctors in the Service, who were still highly suspicious of the Minister.

Mr. BEVAN said that was the characteristic attitude of the medical profession towards every Minister in every country of the world. It was the Opposition which had introduced personalities about the Minister. That was not true about members of the medical profession, but had been deliberately created by the language of the Opposition.

On a division the proposed amendment was then rejected by 13 to 7.

On the motion that the clause stand part of the Bill Sir HUGH LUCAS-TOOTH said the Opposition had not been approached by the British Medical Association or by any official person in the Association about an amendment to the clause. He and his friends had drafted the amendments. They were subsequently seen by the British Medical Association, which took no initiative in the matter, though those members of the Association who had seen the amendments whole-heartedly approved them.

Mr. BEVAN said Sir Hugh's statement must be taken with a large slab of salt, as it contradicted what had been said earlier. He hoped Mr. Elliot would give the Committee some clarification of a serious accusation. It had been said that Opposition members had been in touch with leaders in the medical profession. The Committee should have a frank disclosure of the names of those consulted and their relations with the Conservative party and the British Medical Association.

The Chairman (Sir Charles MacAndrew) said that the debate on the motion that the clause stand part of the Bill was very narrow, and he could not allow those questions to be answered.

Mr. ELLIOT said the Opposition had made a statement on how the amendment was drawn up. It had been shown to responsible persons. It would be wrong for him to go beyond that.

Mr. BEVAN said the Opposition would much regret that morning's work.

Mr. ELLIOT said the Bill imperfectly carried out a pledge given by the Minister in response to representations made by the Opposition after consultation with responsible persons. The Opposition was prepared to leave the matter there.

The clause was then approved, as also was Clause 11.

Settlement of Disputes

On Clause 12 (reference of disputes as to conditions of service of persons employed in health services), Mr. LINSTEAD, on the motion that the clause stand part of the Bill, said it would be helpful to have an elucidation by the Minister of a number of points. Under the clause, disputes over conditions of service or remuneration could be dealt with by conciliation or

could go to the Industrial Court, or to arbitration by arbitrators appointed by the Minister of Labour, or to arbitration by a body appointed by agreement by both sides with a chairman appointed by the Minister of Labour. The crux of the procedure was that there could be no arbitration until both sides were agreed that there should be arbitration. If there was a dispute between the Minister and a section of those serving within the Service, the Minister apparently could refuse to allow that dispute to go to arbitration. Under Section 66 of the principal Act the Minister had power to make regulations prescribing the qualifications, remuneration, and conditions of service, so that if he refused to consent to arbitration he could use his power of making regulations and leave the dissatisfied parties with the sole alternative of approaching the Opposition so that a prayer against the regulations could be moved in the House. Mr. Linstead could not feel that the Minister intended the references to arbitration to be a one-sided gesture. He assumed the Minister intended that when there was a dispute he would not use his power to withhold consent and so prevent that dispute going to arbitration. If Mr. Bevan would say so he would go a long way towards clearing up the purpose of the clause. Mr. Linstead recalled that the Secretary of State for Scotland had given an undertaking to Scottish pharmacists that arbitration would be open to them under this clause. Mr. Linstead asked three questions of the Minister. Did he accept the principle of arbitration as the method of settling disputes which arose on remuneration? Did he regard arbitration as binding on the Crown? If a dispute went to arbitration, would the Minister regard himself as bound by that award, despite the suggestion that the award of an Industrial Court or of an arbitrator could not be binding on the Crown?

Mr. BEVAN asked for an assurance that these questions were not put on behalf of the medical profession.

Mr. LINSTEAD said he had not discussed the matter with any representatives or members of the medical profession and took personal responsibility for putting the inquiries.

Mr. BEVAN said he was glad to have that statement. What was under discussion was an agreement forming part of the participation of the medical profession in the Whitley machinery. The Conciliation Act, 1896, and the Industrial Courts Act, 1919, did not provide for compulsory arbitration, and the present Bill would be an inappropriate place in which to amend those Acts. It had always been held that it would be highly undesirable to have compulsory arbitration under those Acts. The whole purpose of the Whitley machinery was to bring about agreement without arbitration. In the course of the last year agreement had been reached over many matters, especially those concerning nurses and domestic workers in hospitals. It had been a wide range of agreement without resort to arbitration. He much regretted that in the last few months some members of the National Health Service had talked insistently of arbitration before negotiations had begun. That was as though there was an intention to disagree, and that arbitration was inevitable. There was every reason why the machinery of the industrial courts should not provide for compulsory arbitration, because arbitration, once it was made compulsory, meant that it was impossible to vary an award. If the award was imposed like a clamp, any mistake was immediately converted into fact and caused the most irritating conditions for both sides. Nothing new was being done in the clause. All the Government sought to do was to provide for ultimate machinery in the event of a breakdown. He could not agree beforehand that everything should go to arbitration. The Spens Committee was not arbitration. It might be much better to have an inquiry to lay down general principles, guiding any future agreement on a particular matter.

Arbitration

Mr. LINSTEAD asked whether the Minister felt he should refuse arbitration when the other party in a dispute desired it.

Mr. BEVAN said discussions were still going on about the nature of the agreement. When those discussions took place the question of arbitration would arise and would be written into whatever agreement might be reached. All the Bill did was to give powers to enable an agreement to be made. The Committee was not writing an agreement into the Bill. To insert an arbitration clause would not be proper, because the present clause covered every element in the National Health Service and it was necessary that the Ministry should have power from Parliament to enable the machinery to be established. He recalled the case of the Burnham machinery where, after discussions between both sides, a report was made to the Minister of Education, who might or might not implement it. If both sides agreed to go to arbitration, obviously the Minister of Health would accept the consequences of the arbitration. It was much better that in each particular case what should go to arbitration should be decided in regard to the circumstances and not beforehand. The fixing of fees was not a matter upon which the Ministry of Health could agree beforehand to go to arbitration. It was much more complicated. The Government could not, over the vast field of National Health expenditure, say beforehand that Parliament should put it out of its power to consider the fiscal consequences of an arbitration. That was why he did not agree beforehand to compulsory arbitration over the whole field. The Committee should not say beforehand that neither the Chancellor of the Exchequer, nor the Government, nor Parliament, but someone else should determine the operation of public revenue and public expenditure. The fact that regulations had to be made implied the right of the House of Commons to refuse these regulations. Mr. Bevan asked if they wanted to put this outside the power of the elected representatives of the people to decide and to have a Fascist set-up. Only in most exceptional circumstances would the House of Commons throw out a regulation reached after arbitration, yet it must have that residual right.

Sir Lionel Whitby's Letter

Mr. ELLIOT said Mr. Bevan had made a statement in convincing language about the necessity for leaving discretion to the Minister when dealing with claims which might result in demands on the public purse. But the contrary opinion seemed to have arisen in the minds of responsible persons in the medical profession. Since there had been arguments on the channels of information by which the Opposition could legitimately ascertain opinion outside the Committee, Mr. Elliot said the responsible person whom he cited was Sir Lionel Whitby, the retiring president of the British Medical Association. He quoted a letter by Sir Lionel appearing in *The Times* of June 20 which said that in proposals issued in October, 1947, the Government had stated that they were anxious to accord the fullest rights to arbitration, subject to preservation of the Government's prerogative. Sir Lionel had added that it seemed the Government had forgotten a pledge given to the medical profession before the start of the National Health Service. That letter had led to a resolution passed at Harrogate recording with regret that the Minister and Ministry had shown little or no desire for co-operation with the profession in its efforts to serve the public, that they had met the profession's suggestions with indifference and procrastination, and that they had been guilty of breach of faith. Mr. Elliot took it that Mr. Bevan felt his conscience was entirely clear in the matter. His argument, however, was not written on a clean sheet of paper. It came at the end of long negotiations in which it would be most unfortunate if any suggestion of breach of faith were not immediately dispelled.

Sir HUGH LUCAS-TOOTH said that, whereas a doctor employed on his own account could go to arbitration and demand that the decision of the arbiter should be enforced, yet as soon as he had access to the bottomless purse of the State he must become subject to the discipline of political decisions. Sir Hugh did not quarrel with the assertion of Mr. Bevan that, subject to the control of the House of Commons, he must retain control of these decisions, but there was a difference, as between the two sides, in arbitrations under the Bill. If the employer wished to insist on arbitration he could, under the clause, see it was made compulsory, whereas the employed could not insist that a grievance should be the subject of arbitration and that the arbitration should be put into force unless the employer consented. That was inherently unfair and undesirable. The medical profession had understood it had received a promise from Mr. Bevan that it would have a right to insist on arbitration equal with the right of its employers. It seemed to Sir Hugh

that Mr. Bevan had not fulfilled those terms, and the Committee should inquire how Mr. Bevan proposed that doctors, nurses, and all concerned were to be treated fairly in the fixing of their conditions of service. Sir Hugh asked if the clause meant that either side could refuse an arbitration, or that only the Minister could do so. He believed that the latter was the case.

Mr. LINSTEAD said it was a good thing to take negotiations on salaries out of the hands of the Minister, so that the Minister would be removed from day-to-day friction with the people with whom he was concerned.

No Compulsory Arbitration

Mr. BEVAN said he did not attach undue weight to the adjectives contained in the resolution of the conference of the British Medical Association. That was a very adjectival body, incapable of passing a resolution except in terms of hyperbole. It did not intend every word to be taken seriously. He could tell a tale of procrastination which would show he was the most badly used man in Britain. Part of the difficulty of the Ministry was to get the members of the medical profession to act with more expedition. Their machinery was so cumbrous that months passed before any decision was received from them. Their negotiating committee was never entrusted with negotiating powers, and the profession had prided itself that the negotiating committee had no power to settle with the Minister. Mr. Bevan said he had tried to come to a conclusion on specialists' terms of remuneration, but month after month went by and the profession was quite incapable of reaching a decision. The clause merely enabled machinery to be set up under the two Acts to which the clause referred. Once it had been accepted and the medical profession had joined the Whitley machinery, disputes would be settled in accordance with the Acts. In these there was no provision for compulsory arbitration, nor did Mr. Bevan think that there should be. Negotiations still continued on the agreement under which doctors would share in the Whitley machinery. There could be no charge of breach of faith until a conclusion had been reached, and the letter of Sir Lionel Whitby should not have been written in such terms. The difficulty was that professional persons reached precipitate conclusions and rushed into the Press.

The October, 1947, proposals to which Sir Lionel drew attention did not differ from what Mr. Bevan had said on the previous day. Mr. Bevan declared that he had not altered his statement that a code of conduct was unlikely to be arbitrable, but a simple proposal for a change in wages or salaries almost certainly was arbitrable. Under the two Acts mentioned in the clause mutual consent was necessary before arbitration. He could not take the medical profession to arbitration if it did not wish to go, nor could the profession take him if he did not desire to go. If arbitration were known to be at the end of the road from the beginning, then all would go to arbitration straight away. Instead of talking about arbitration in every case the Ministry should negotiate with the representatives of the medical profession the terms to be agreed. The medical profession should come forward from time to time with their proposals and try to settle them by negotiation. If that was not possible, they and the Ministry should decide what means could be adopted to reach a mutually acceptable conclusion. Those means might not be arbitration. It might be better to have an inquiry or to refer matters to a quasi-judicial professional body for consideration and statement of principles. He wanted to leave the question as open as possible. He appreciated that discussion on the point had been necessary.

Mr. HOWARD said Mr. Bevan had complicated the matter by saying that in arbitration procedure it was necessary to agree on what was to be referred. If Mr. Bevan would give a clear assurance that either party should have the right to refer an unsolved matter to a second independent and impartial body he would receive the whole-hearted support of all professional men and women.

The Industrial Court and the N.H.S.

Mr. BEVAN pointed out that the Minister of Labour was the person concerned under the Conciliation Act. Section 2 of that Act envisaged a battery of agencies by means of which settlement might be brought about by mutually agreed arbitration, and he did not think there was any reason to apprehend that this elaborate machinery would fail. He added that the Government desired to establish a special division of the Industrial Court to deal with the National Health Service and so to create a body of people with special knowledge of that service which would eventually obtain the confidence of everyone concerned. The Minister of Labour would ensure that those appointed had experience of other fields of arbitration. In very few instances would regulations be needed to give effect to any decisions. Only three situations could ultimately arise. The applicants could withdraw their application, in which case the original situation would be revived. They could agree to arbitration. They could agree to accept the Minister's fiat. These were the limitations of reality. No machinery could be more flexible than that which he had described. If the representatives of the profession got themselves into a position where they could only have recourse to arbitration or accept the decision of the Minister, that would be defective negotiation.

Mr. ELLIOT asked whether there was not a fourth course open to the applicants—withdrawal of labour.

Mr. BEVAN suggested there was not, and that members would not believe that a set of professional workers who had been offered arbitration would prefer to strike rather than to accept it. To cease work would be the abandonment of all machinery.

Dr. HADEN GUEST said Mr. Bevan had put his finger on the spot when he talked of special machinery. The machinery devised for the call-up of doctors for war service, working by conciliation, understanding, and agreement, had done most valuable work. A parallel kind of machinery should deal with the special difficulties of the medical profession. In very few cases would arbitration have to be considered.

Mr. ELLIOT referred to Sir Lionel Whitby's letter and said it was the Minister's business to see that such misunderstandings did not arise.

Mr. BEVAN said it was ridiculous to say that the duty of the Minister was to remove misunderstandings on the benches opposite. In some cases a neurologist would be required—not a Minister.

Mr. ELLIOT suggested Mr. Bevan was thinking of a psychologist—not a neurologist. The apprehension had been left not only in the mind of the president of the British Medical Association but in the mind of the Association itself.

Mr. BEVAN asked whether the Opposition desired compulsory arbitration in all cases. Compulsory arbitration was not in the Whitley machinery. A misunderstanding had arisen in the mind of the medical profession: they had confused temporary war legislation with pre-war Acts and with the machinery which the Government was setting up.

Mr. ELLIOT said it was a great pity that as late as June 20 of this year the negotiating body should still be in doubt over what had been proposed to them as long ago as October, 1947. The Minister had just said that a simple proposal for a change in wage or salary rates was almost certainly arbitrable. That was bound to reassure those who had read Mr. Bevan's declaration of the previous day that the fixing of fees in certain circumstances was not a matter on which the Ministry could agree beforehand to go to arbitration. The Minister apparently had in mind that some other proceeding might be applicable, but those who had read his statement could easily take it to mean "I will make a decision and announce it."

Mr. BEVAN said that if clarity was needed by members of the medical profession they could easily obtain it by entering into an agreement with the Government under the Whitley machinery when the clause was part of the Act. This was an enabling clause, and what would be done under it was a matter for negotiation between the Government and the representatives of the medical profession.

Mr. ELLIOT said that in practice the medical profession had been able to work such things very well. The setting up of a committee to decide under what circumstances the Conscription Acts should apply to them had been a shining triumph of voluntary co-operation. In the present matter the medical profession was in a position where they had to negotiate with an all-powerful employer who could legislate. That employer was negotiating with a body of employees who had declared

that under no circumstances would they ever go on strike. The profession desired the assurance, and had that day received a certain amount of it, but it was undesirable that the Minister should deal with the point about procrastination and not with the point about breach of faith. The doctors were negotiating under different circumstances to those of any other profession. Men who held in their hand life and death could not go on strike, and therefore at the end of the day must fling themselves upon the compassion of the Minister.

Mr. BEVAN said that under the 1946 Act the doctors were not in contract with the Crown, but with the regional hospital boards and executive councils. The Minister could not be indifferent to the demands made upon the Chancellor of the Exchequer over so wide a field. He asked Mr. Elliot to say whether he thought that in this field there should be compulsory arbitration.

Mr. ELLIOT replied that everyone who had spoken on the Opposition side had said "No," and he too said "No." What the Opposition was trying to do was to secure for the benefit of the Service something to replace compulsory arbitration, which all sides agreed it was not possible to use. The suggestion of Mr. Bevan that it was desirable to create a special section of the Industrial Court concerned with the National Health Service was an advance, but he begged him to consider that the necessity for a reassurance still remained.

The clause was then ordered to stand part of the Bill without a division.

Resumption of Practice

On the motion that Clause 13 (removal from lists of persons who do not provide services) stand part of the Bill Mr. LINSTEAD asked what assurance a dental practitioner had that if he was taken off the lists on ceasing to provide dental services for persons in that area he would be replaced on the lists when he resumed the provision of such a service. In the clause it looked as though someone who had been disqualified would not have the automatic right of returning to the list when he resumed practice.

Mr. BEVAN said that if such a practitioner wished to come back he could have his name put up—an illustration of the fact that the Minister had got to take him but that he was not bound to come.

Sir HUGH LUCAS-TOOTH asked whether the clause would not be used as a means of disqualifying practitioners who wished to take only a small share in the public service.

Mr. BEVAN replied that the executive councils had reported that it was confusing when general practitioners who left the district entirely or did not practise at all still had their names up, and the Ministry had no way of removing these names.

Mr. LINSTEAD said he understood that what the Minister said meant that a man's name was removed but that he was not disqualified. Mr. BEVAN indicated assent to this, and Mr. LINSTEAD said he was satisfied. The clause was then ordered to stand part of the Bill, as were Clauses 14 and 15.

Mr. BEVAN, proposing a new clause concerned with the superannuation of officers of certain hospitals, explained that the Ministry had contracts of service with hospitals which did not come within the ambit of the National Health Service but of which he wished to make use. Such hospitals found it difficult to get staff because people who went outside the National Health Service lost their superannuation rights. This clause was read a second time and added to the Bill.

Mr. BEVAN then proposed a further new clause concerned with superannuation of certain officers of Government departments. He said that the Government desired to have the utmost mobility within the Government service, so that doctors could move freely about in that service, particularly in the case of the Colonial service. The peculiar situation was arising that because of the success of preventive health services in countries like Great Britain many doctors had not as much clinical experience as formerly of epidemic diseases. The Government desired that they should be able to take part in the Colonal medical service and come back to the National Health Service carrying with them their superannuation rights. This clause was added to the Bill, and the Committee adjourned until July 5.

London Waiting-lists

Answering Mr. PLATTS-MILLS on June 23 Mr. BEVAN furnished these waiting-lists of the London Regional Hospital Boards. He added that a very large proportion of the waiting-lists consisted of ear, nose, and throat cases, the majority of them awaiting tonsillectomy.

	Medical	Surgical	Ear, Nose, and Throat	Tuber-culosis	Others	Total
N.W. Metropolitan	1,150	14,386	7,000	1,438	483	24,457
N.E. Metropolitan	453	9,344	6,259	1,058	4,172	21,286
S.E. Metropolitan	617	5,719	10,129	1,128	5,700	23,293
S.W. Metropolitan	853	7,934	8,082	1,098	3,066	21,033
						90,069

Non-paying Patients in Pay-Beds.—Mr. COLLINS asked Mr. Bevan on June 23 to draw the attention of Regional Hospital Boards to the importance of ensuring that priority in the allocation of private wards was given to non-paying patients who were in need of privacy on medical grounds. Mr. BEVAN said his information was that Boards already followed this practice. In 69 hospitals having 847 private pay-beds, 342 were at the time of his inquiry occupied by non-paying patients on medical grounds.

Universities and Colleges

UNIVERSITY OF LONDON

A Special University Lecture on "Normal and Pathological Physiology of the Kidney" will be delivered by Donald D. Van Slyke, Ph.D., Sc.D. (Rockefeller Institute for Medical Research), at the London School of Hygiene and Tropical Medicine, Keppell Street, W.C., on Monday, July 18, at 5.30 p.m.

The degree of Ph.D. in the Faculty of Medicine (Non-clinical) has been awarded to S. De, M. A. El Meheiri, S. El D. M. Salama, A. S. Sinha, S. Manheim.

UNIVERSITY OF WALES

The following candidates for the degrees of M.B., B.Ch. at the Welsh National School of Medicine have satisfied the examiners at the examination indicated:

PATHOLOGY AND BACTERIOLOGY.—D. F. Brown, Josephine J. Candy, L. M. Charles, D. E. Copas, B. M. Davies, Ilid M. L. Davies, *J. M. S. Dixon, J. L. A. Dowse, D. R. T. Evans, D. W. Evans, J. Evans, B. M. Frost Smith, B. J. Fudge, S. G. Gang, Nansi G. Gwynne, A. J. Hooper, D. T. Jones, Mary E. V. Jones, J. Magell, T. M. Morgan, W. B. Morgan, E. D. Morris, T. L. Morris, D. Phillips-Miles, Dilys Rees, J. W. Rees, D. B. Scourfield, A. P. Thomas, Margaret E. Thomas, Margaret H. J. Thomas, Anne G. Tighe, D. S. Wood.

*With distinction.

UNIVERSITY OF SHEFFIELD

At a meeting of the University Council held on June 17 the following appointments were made: *Part-time Lecturer in Neurology and Clinical Teacher:* James Carson, M.B., M.R.C.P. (to be held concurrently with his part-time Lectureship in Psychology). *Part-time Clinical Teachers in Medicine:* K. J. G. Milne, M.D., D.P.H., E. G. G. Rhind, M.B., Ch.B., M.R.C.P. *Part-time Clinical Teachers in Surgery:* J. T. Chesterman, F.R.C.S., F.A.C.S., F. J. P. O'Gorman, F.R.C.S.Ed., M.R.C.O.G., S. Pappworth, M.B., M.Ch.(Orth.). *Part-time Lecturer in Obstetrics and Gynaecology and Clinical Teacher:* David H. Lees, F.R.C.S.Ed.

UNIVERSITY OF BRISTOL

J. S. Baxter, M.A., M.Sc., M.D., F.R.C.S.I., Senior Lecturer in Anatomy, has been elected Reader in Anatomy in the University, from Aug. 1.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Mr. Norman Shenstone, M.D., Hon.F.R.C.S., will deliver the Tudor Edwards Lecture at the College (Lincoln's Inn Fields, London, W.C.) on Wednesday, July 13, at 5 p.m. His subject is "The Treatment of Bronchiectasis."

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 18. [No. 24

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each Infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1949					1948 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	22	2	18	2	1	45	8	14	6	1
Deaths		—	—				—	1		
Diphtheria	82	10	28	5	10	158	15	56	11	3
Deaths	—	—	1	—	1	1	—	—	—	—
Dysentery	57	5	29	1	2	91	16	41	2	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	—	—	—	—	—	—	—	1	—	—
Deaths		1					2			
Erysipelas			22	5	2			34	8	6
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				44					23	
Deaths	33	1	4	1	1	45	4	3	1	3
Measles*	9,152	908	419	259	132	10,624	755	188	151	67
Deaths†			—	—	—			1	1	—
Ophthalmia neonatorum	39	4	6	3	—	53	4	21	—	1
Deaths										
Paratyphoid fever	38	1	—	—	—	8	—	—	1 (B)	—
Deaths	—	—	—		—	—	—	—	—	—
Pneumonia, influenzal	426	18	6	3	6	456	19	1	3	1
Deaths (from influenza)‡	4	—	1	—	—	3	—	—	2	—
Pneumonia, primary			147	23				161	30	
Deaths	159	31		8	5	156	23		6	9
Polio-encephalitis, acute	3	2				—	—			
Deaths										
Poliomyelitis, acute	35	4	2	2	—	15	—	3	3	—
Deaths§	5	—				—	—			
Puerperal fever		—	2				—	8		—
Deaths										
Puerperal pyrexia‖	99	13	5	1	—	96	10	8	—	2
Deaths		—					—			
Relapsing fever	—	—			—	—	—	—		—
Deaths										
Scarlet fever	930	73	196	74	53	1,542	107	374	62	41
Deaths†			—	—	—			—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	8	5	—	—	1	7	—	—	1	—
Deaths	1	1	—	—	—	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	2,253	111	101	100	83	3,086	273	40	105	17
Deaths	5	—	2	1	—	6	—	—	1	1
Deaths (0–1 year)	256	32	46	33	4	295	32	35	14	14
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,193	619	623	171	94	4,178	635	536	186	109
Annual death rate (per 1,000 persons living)			12·5	10·6				10·8	11·6	
Live births	8,201	1307	968	395	249	8,565	1412	1074	434	264
Annual rate per 1,000 persons living			19·4	24·5				21·7	27·1	
Stillbirths	188	27	21			211	16	32		
Rate per 1,000 total births (including stillborn)			21					29		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Deaths from measles and scarlet fever for England and Wales, London (administrative county), will no longer be published.

‡ Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

§ The number of deaths from poliomyelitis and polio-encephalitis for England and Wales, London (administrative county), are combined.

‖ Includes puerperal fever for England and Wales, Eire, and Northern Ireland.

EPIDEMIOLOGICAL NOTES

Paratyphoid Fever in North Durham

Since the beginning of June eighty-one infections with *S. paratyphi-B* have been recognized in North Durham. All those so far tested have been phage type 3a. The infections fall into two main groups. In the Jarrow-Hebburn-Boldon area 74 cases have been investigated. The first case occurred on May 25, and the majority of clinical cases began during the following week. The severity of the disease has varied considerably. In 10 patients the illness was moderate to severe and the condition of three gave rise to anxiety, though there have been no deaths. In the remainder the disease has been mild or trivial; and in nearly half there were no symptoms, the infection being recognized only in the course of examination of contacts. Cream cakes appear to have been the cause of the primary infections. Two symptomless infected persons have been detected in the bakery concerned, though it is not yet known whether they are true carriers or recent infections. One of these, a baker who makes the cream cakes, excreted the organism in his urine. It appears that the primary source of infection has ceased, but further secondary cases are probable, since the cakes believed to have been infected had a wide distribution. In the Sunderland area seven infections have been recognized in five families. No connexion has been established between these families and those infected in the Jarrow-Hebburn outbreak, and no vehicle of infection has been discovered. Variations in the clinical picture have been similar to those found in the Jarrow-Hebburn outbreak. There have been no deaths.

Poliomyelitis in Cornwall

Twelve cases of poliomyelitis have been notified during the last 14 days (up to July 4) in the Redruth-Camborne urban district. Eight of these cases were from the village of Illogan, four in one family. Only five of the patients have developed paralysis, and one child, aged 2½, has died. Of the 12 cases so far notified, nine are in the 1–5 age group.

Quarterly Returns for Scotland

The birth rate during the March quarter of 1949 was 19.0, being 0.8 below the rate for the first quarter of 1948. The infant mortality rate of 50 per 1,000 registered live births was 1 below the rate for the corresponding quarter of the preceding year and 15 below average of the first quarters of 1944–8. The general death rate at 15.1 per 1,000 was 2.0 more than in the first quarter of 1948 and 0.3 above the average of the five preceding March quarters. There were 356 deaths attributed to the principal epidemic diseases, the largest totals being 280 from influenza, 45 from whooping-cough, 14 from cerebrospinal fever, 7 from measles, and 6 from diphtheria. The death rate from all forms of tuberculosis was 78 per 100,000 and from respiratory tuberculosis 70. The former rate is the same as that for the first quarter of 1948, but the latter is 4 more than the corresponding figure for 1948. These rates were respectively 4 less and 5 more than the average of the five preceding first quarters.

Discussion of Table

In *England and Wales* there was an increase in the number of notifications of whooping-cough 447, acute poliomyelitis 18, and paratyphoid fever 14. There were decreases in the incidence of scarlet fever 160 and measles 97.

The largest increases in the notifications of measles were London 107 and Lancashire 98; the largest decreases were Derbyshire 134 and Kent 104. A fall occurred in the incidence of scarlet fever in all areas except the south-eastern counties, where there was a slight rise; the largest fall was 46 in Lancashire.

The chief feature of the returns for diphtheria was an increase of 6 in London. The largest rises in the incidence of whooping-cough were Lancashire 99 and Yorkshire West Riding 53.

A further 28 cases of paratyphoid fever were notified from the outbreaks in Durham, referred to above, where 15 cases

were reported last week. The largest returns during the week were Jarrow M.B. 13 and Hebburn U.D. 7.

A small decrease in the incidence of dysentery was recorded in every area except Lancashire. The rise there was due to the experience of Liverpool C.B., where the cases increased from 8 to 26.

In the rural district of the Isle of Wight 82 cases of food poisoning were notified. A further 25 cases of food poisoning were notified in Northumberland, Hexham U.D.; 25, 4, and 24 cases have been notified in this town during the past three weeks.

In *Scotland* decreases were recorded in the notifications of measles 157, whooping-cough 27, and dysentery 22; an increase was reported for scarlet fever 16. The decrease in the incidence of dysentery was due to the city of Glasgow, where the cases notified fell from 34 to 18.

In *Eire* increases occurred in the notifications of measles 42, whooping-cough 24, scarlet fever 11, and diarrhoea and enteritis 23. The largest of the fresh outbreaks of measles was at Kerry, Listowel R.D. 49. In Dublin C.B. notifications of measles were 36 fewer than in the preceding week, but an increase was recorded for other infectious diseases in this city.

In *Northern Ireland* increases were reported in the notifications of whooping-cough 20, scarlet fever 9, and diphtheria 7, with a decrease of 27 in the incidence of measles.

Week Ending June 25

Notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,137, whooping-cough 2,181, diphtheria 73, measles 6,863, acute pneumonia 334, cerebrospinal fever 26, acute poliomyelitis 48, dysentery 66, paratyphoid 31, and typhoid 8.

The Services

Major-General K. A. M. Tomory, C.B., O.B.E., late R.A.M.C., has been appointed Honorary Physician to the King in succession to Major-General W. Foot, C.B., M.C., who has retired.

DEATHS IN THE SERVICES

Colonel ALFRED ROSENBLOOM, late I.M.S., died on June 1 at the age of 47. A native of Edinburgh, he graduated M.B., Ch.B. there in 1923 and took the Liverpool D.T.M. in 1929. In 1925 he joined the Indian Medical Service, and he retired in 1947 with the honorary rank of colonel. He leaves a widow and two young children.

Lieut.-Colonel E. J. Curran writes: His many friends in the Services will learn with much regret of the recent death of "Rosie" or "Blossom," as he was known to many of us. A cheerful kind-hearted man who loved his work, he was popular alike with colleagues and patients and was always prepared to give of his best. We have lost a good comrade and reliable colleague.

Surgeon Rear-Admiral WILLIAM WALLACE KEIR, who was formerly in charge of the Royal Naval Hospital at Haslar, died on June 12 at the age of 72. A student at Glasgow University, he graduated M.B., Ch.B. in 1898. During the early part of the 1914–18 war he was medical officer of the minelayer *Iphigenia*. He served at Jutland in the *Warspite*, and from December, 1916, he was senior medical officer of the hospital ships *Rewa* and *China*. He was made a C.M.G. in 1918 and was a Chevalier of the Legion of Honour. After the war Keir was squadron medical officer of the First Battle Squadron and the Battle Cruiser Squadron, and was later in charge of the hospital ship *Maine*. After service in China in charge of the Hong Kong Naval Hospital, he was transferred in 1932 to the Royal Naval Hospital at Haslar, where he succeeded Surgeon Rear-Admiral H. C. Whiteside. In 1934 he was appointed honorary surgeon to the King, and he retired in 1935.

The National Office of Vital Statistics in the U.S.A. has recently reported that the maternal mortality rate for the United States in 1947 was 1.3 per 1,000 live births. This is said to be the lowest reported for any nation. The State with the lowest rate (0.6 per 1,000 live births) was Minnesota.

Medical News

Nuffield Professor of Orthopaedic Surgery

Dr. Joseph Trueta has been appointed Nuffield Professor of Orthopaedic Surgery in the University of Oxford.

Dr. Trueta, who is 51 years old, was born in Barcelona and graduated at the University of Barcelona in 1921, proceeding M.D. the following year. In 1933 he was appointed assistant professor of surgical pathology in the University, and in 1935 succeeded Professor E. Ribas-Ribas as Chief Surgeon to the Hospital de la Santa Creu i Sant Pau, Barcelona, bearing the title of Professor of Surgery. During the Spanish Civil War he gained wide experience there in the treatment of casualties, and developed the closed-plaster technique of treating compound fractures. He came to Britain in 1939, and since then has been working at the Wingfield-Morris Orthopaedic Hospital at Oxford and hospitals associated with it. In 1940 he was appointed to the staff of the Wingfield-Morris Hospital in the capacity of adviser to the Ministry of Health, and from 1942 to 1944 he was in charge of the accident service at the Radcliffe Infirmary, Oxford. Oxford University made him an additional Member of the Faculty of Medicine in 1949. Among his earliest papers on war surgery published in this country was "War Fractures Treated by the Closed Method," which appeared in the *British Medical Journal* of Dec. 2, 1939 (p. 1073). More recently he has studied the renal circulation, and in particular the vascular short-circuiting mechanism and its relation to cortical ischaemia. This work was recorded in a monograph, *Studies of the Renal Circulation*, by himself and his colleagues published in 1947.

Guy's Hospital Honours Lord Nuffield

Lord and Lady Nuffield were present at Guy's Hospital on June 29, when Lord Goschen unveiled a statue of Lord Nuffield by Mr. Maurice Lambert. This was the outcome of a resolution by the Court of Governors in 1944 to mark "their profound appreciation of his manifold benefactions to the hospital, of his inestimable services as its treasurer, and of his never-failing interest in the progress of medicine." The cost of the statue was met by subscriptions limited to the governors and staff of Guy's and to men and women trained there. The intention is that the statue will stand in the new hospital, but in the meantime it has been placed in the west quadrangle. The ceremony was performed in the presence of many distinguished visitors and of large numbers of nurses, students, patients, and their friends. In his speech Lord Goschen thanked Lord Nuffield for his many benefactions to Guy's, among them his gift of £250,000 for rebuilding, and for his services to medicine. In reply Lord Nuffield said that in his travels he had found that Guy's Hospital was renowned throughout the world.

R.A.M.C. Book of Remembrance

The Book of Remembrance, which records the names of 437 officers and 2,026 other ranks of the Royal Army Medical Corps killed in the second world war, was dedicated by the Dean of Westminster at Westminster Abbey on June 27. The ceremony, which took place after evensong, was held beneath the R.A.M.C. window which was unveiled in 1922. Among those present were Lieutenant-General Neil Cantlie, Director-General Army Medical Services, and officers and other ranks of the R.A.M.C.

Recognition for Bravery

The *London Gazette* has announced the appointment as M.B.E. (Civil Division) of Dr. W. J. L. Sladen, Medical Officer, Falkland Islands Dependencies Survey, for courage and fortitude in hazardous circumstances when isolated in Graham Island.

Bilharzia Film

Two films about bilharzia were shown at the London School of Hygiene on June 30. Professor G. Macdonald introduced Mr. K. M. Goodenough, the High Commissioner for S. Rhodesia, who explained that the films had been prepared by the Health and Public Relations Departments of the Government

of S. Rhodesia. The first film, "The African Schistosomiases," was intended for the instruction of doctors and health workers, while the second film, "Still Waters," was for public education. In both films emphasis is placed on the prevention of infection. "The African Schistosomiases" runs for about fifty minutes and gives a full account of the life cycle of the parasites, the pathology of the disease, methods of laboratory investigation, treatment, and prevention. "Still Waters" is a shorter film, illustrating in a convincing way, with the help of actors, the dangers of carelessness and the precautions which should be taken to avoid infection.

British Doctors Honoured in New York

At the banquet of the Seventh International Congress on Rheumatic Diseases held at the Waldorf-Astoria in New York recently the following were presented with Diplomas of Honorary Membership of the American Rheumatism Association: Dr. C. W. Buckley, Dr. J. B. Burt, Dr. D. H. Collins, Dr. W. S. C. Copeman, Professor L. S. P. Davidson, Dr. J. A. Glover, Lord Horder, Dr. G. D. Kersley, and Dr. W. Tegner.

Wills

Dr. Louisa Hamilton, who was senior physician to the Elizabeth Garrett Anderson Hospital, left £21,169. Dr. Hugh Mundle Wilson, of Linton, Cambs, left £10,500; Dr. William John Young, of Kempston, Beds, £7,137; Dr. Matthew McLintock Bainbridge, of Birmingham, £2,283.

COMING EVENTS

Maternal and Child Health in India

A lecture on this subject will be given by the Hon. Rajkumari Amrit Kaur, Minister of Health to the Government of India, at the Royal College of Obstetricians and Gynaecologists, 58, Queen Anne Street, London, W.1, on Monday, July 11, at 5 p.m. Admission is by ticket only; these can be obtained from the secretary.

Netherne Psychiatric Hospital

An exhibition of paintings by patients of Netherne Psychiatric Hospital, Coulsdon, Surrey, will be formally opened by the Countess of Limerick at 1, Grosvenor Crescent, Hyde Park Corner, London, S.W., on Monday, July 11, at 12 noon. The exhibition will remain open until July 16, from 10.30 a.m. to 4.30 p.m. daily (Saturday, 10.30 a.m. to 12 noon). A lecture will be given each day at 3 p.m.

Osler Club

A dinner will be held by the Osler Club at the Royal College of Surgeons on July 12 at 7.15 p.m. for 7.30. Mr. Gilbert Frankau will deliver the Oslerian Oration on "Are We Over-doctored?—A Centennial Reflection."

International Congress of Otolaryngology

The fourth International Congress of Otolaryngology will be held at King's College, Strand, London, W.C., from July 18 to 23, and will be opened by the Duchess of Kent on Monday, July 18, at 11 a.m.

SOCIETIES AND LECTURES

Monday

LONDON UNIVERSITY: INSTITUTE OF CHILD HEALTH.—At Hospital for Sick Children, Great Ormond Street, London, W.C., July 11, 5 p.m., "*The Artificial Kidney*," Alexander Simpson-Smith Lecture by Professor Gordon Murray, Associate Professor of Surgery in the University of Toronto.

Tuesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., July 12, (1) 11 a.m., "*Urethritis due to Protozoa, Metazoa, and Fungi*," by Dr. A. H. Harkness; (2) 5 p.m., "*Hydatid Disease and Bilharzia of the Urinary Tract*," by Mr. R. Ogier Ward.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—July 12, 5 p.m., "*The Role of the Aged in Modern Society*," F. E. Williams Lecture by Dr. J. H. Sheldon, F.R.C.P.

SOCIETY FOR THE STUDY OF ADDICTION.—At Medical Society of London, 11, Chandos Street, W., July 12, 4 p.m., "*The Alcohol Problem in Switzerland*," by Dr. Henri Revilliod (Geneva).

Wednesday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., July 13, (1) 11 a.m., "*Traumatic Urethritis*," by Dr. A. H. Harkness; (2) 5 p.m., "*Stricture of the Urethra*," by Mr. J. E. Semple.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—July 13, 5 p.m., "*The Treatment of Bronchiectasis*," Tudor Edwards Lecture by Mr. Norman Shenstone, M.D., Hon.F.R.C.S.

ROYAL SANITARY INSTITUTE.—At 90, Buckingham Palace Road, London, S.W., July 13, 2.30 p.m., Discussion: "*Health Centres*," to be opened by Dr. J. A. Scott, W. J. Durnford, F.R.I.B.A., and Dr. A. Talbot Rogers.

Thursday

INSTITUTE OF UROLOGY.—At St. Paul's Hospital, Endell Street, London, W.C., July 14, (1) 11 a.m., "*Ureteritis Due to Local Diseases of the Penis*," by Dr. A. H. Harkness; (2) 5 p.m., "*Gonococcal Urethritis*," by Dr. W. N. Mascall.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS.—At Royal Society of Medicine, 1, Wimpole Street, London, W., July 14, 5 p.m., "*Caudal Anaesthesia*," by Professor R. A. Hingson (Johns Hopkins Hospital, Baltimore). Admission by ticket only.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—July 14, 5 p.m., "*Adventures in Metabolism*," Bernhard Baron Lecture by Professor John Beattie, M.D.

Friday

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, London, W.C.—July 15, Part I, 3.45 p.m., "*Odontogenic Tumours of the Jaws*," Part II, 5 p.m., "*Osteogenic Tumours of the Jaws*," Charles Tomes Lecture by Professor Kurt Thoma (President, American Academy of Oral Pathology).

ROYAL SANITARY INSTITUTE.—July 15, 10.15 a.m., Visits to Messrs. Boots Pure Drug Co.'s Works at Beeston and to sewage disposal works and farm at Stoke Bardolph; 2.15 p.m., At the Guildhall, Nottingham, "*Atmospheric Pollution—the Present Position and Outlook for the Future*," by Alfred Wade; "*Sewage Disposal in Nottingham—Some Recent Developments*," by Hugh Lawson, B.Sc.

APPOINTMENTS

NEWNHAM, C. T., M.R.C.S., L.R.C.P., D.O.M.S., Medical Officer, Western Region, British Railways.

ST. ANDREW'S HOSPITAL, BOW, LONDON, E.—*Senior Resident Physician*, R. King Brown, M.D., M.R.C.P. *Assistant Specialist, Obstetrician and Gynaecologist*, S. Lask, M.D., M.R.C.O.G.

WEST, R., M.R.C.S., L.R.C.P., D.P.H., Medical Officer to the National Dock Labour Board's Medical Scheme for the Humber Ports.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Byrne.—On June 17, 1949, to Ruth (née Marle), wife of John W. Byrne, M.B., B.Ch., B.A.O., of The Barn, Rush Hill, Bath, a brother for Simon—Jeffrey Patrick.

Fiddian.—On June 26, 1949, at Warwick Hospital, to Audrey (née Maslin), wife of Dr. M. P. Fiddian, a son—Colin Paul.

Majury.—On June 16, 1949, at Johnstone House, Belfast, to Margaret (née Huss, S.R.N.), wife of Dr. Arthur S. Majury, a daughter.

Neve.—On June 25, 1949, at Guy's Hospital, to Elizabeth (née Hunt), wife of Richard Neve, M.B., B.S., a sister for Michèle.

Playfair.—On June 27, 1949, at Cambridge, to Margaretta (née Blakeston), wife of Dr. A. S. Playfair, a brother for David and Rodney—Quentin.

Smith.—On April 30, 1949, in Singapore, to Thorven, wife of Mr. T. E. Smith, a daughter.

MARRIAGES

Shield—Wood.—On June 3, 1949, at St. John's Presbyterian Church, Kensington, London, James Boyd Shield, M.B., F.R.C.S.Ed., Southampton, to Margaret Hay Wood, Aberdeen.

Zetzel—Guttmann.—On June 26, 1949, in London, Dr. Louis Zetzel, of Boston, Mass., U.S.A., to Elizabeth Guttmann (Dr. Elizabeth Rosenberg), widow of Dr. Eric Guttmann.

DEATHS

Lane.—On June 20, 1949, at Chevers Lodge, Ballybunion, Co. Kerry, Daniel Thomas Lane, M.D., Lieutenant-Colonel I.M.S., retired.

McAfee.—On June 13, 1949, at West Kirby, Duncan John McAfee, M.C., M.B., Ch.B., aged 63.

Maurice.—On June 19, 1949, at Manton Weir, Marlborough, Godfrey Kindersley Maurice, D.S.O., M.C., M.R.C.S., L.R.C.P., Colonel late R.A.M.C., aged 62.

McCarter.—On June 8, at the Royal Portsmouth Hospital, William Harold Raphael McCarter, M.B., B.Ch., of East Cottage, Hurstpierpoint, Sussex, late of Burgess Hill.

Mullings.—On June 12, 1949, William Thomas Mullings, M.D., of 27, Compayne Gardens, London, N.W., formerly of 84, Belgrave Road, London, S.W., and Dunsfold, Godalming.

Murray.—On June 19, 1949, at Bridge of Earn Hospital, Archibald C. Murray, M.B., Ch.B.

O'Malley.—On June 22, 1949, at Wharfedale, Cantelupe Road, Bexhill-on-Sea, John Francis O'Malley, M.Ch., F.R.C.S., aged 80.

Purves-Stewart.—On June 14, 1949, at 45, Edwardes Square, London, W., Sir James Purves Morison Purves-Stewart, K.C.M.G., C.B., M.D., F.R.C.P., aged 79.

Thwaites.—On June 10, 1949, at Old Acres, Ashtead, Surrey, Cyril Evered Thwaites, M.R.C.S., L.R.C.P., aged 74.

Any Questions ?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Hypertension and Functional Menorrhagia

Q.—*Is there any relationship between hypertension and the functional menorrhagia of the menopause? Could you please quote references?*

A.—There is no work on record which establishes the existence of such a relationship or which goes to show that hypertension alone ever causes any form of uterine haemorrhage. The idea was popular in the early part of this century, and throughout the literature of that time are phrases such as: "The significance of functional hypertension as a factor in uterine haemorrhage is obvious" (C. Culbertson, *Surg. Gynec. Obstet.*, 1916, **23**, 667). Statements of this kind, however, are not supported by evidence. Although this view has gradually lost popularity and is now rarely mentioned in textbooks, it is difficult to find any reference to investigations which prove that hypertension does not cause uterine bleeding. Nevertheless, in most cases of "functional uterine bleeding" another cause can be demonstrated: a significant association between bleeding and hypertension is not noticeable in everyday practice, and uterine bleeding does not occur at the age when the blood pressure reaches the highest levels, therefore, after the menopause.

It might be argued that uterine haemorrhage may result if the hypertension is associated with arteriosclerosis affecting the uterine vessels. This again is an old view which was the basis of numerous articles earlier this century. Many of these were reviewed by E. Novak in *Menstruation and Its Disorders* (Gynaecological and Obstetrical Monographs) in 1921, and he concluded then that "no evidence has as yet been presented which, to my mind, justified us in ascribing more than an occasional role to this cause." Nor has such evidence been produced since that time.

Adrenaline and Blood Pressure

Q.—*Does the blood pressure rise or fall following the use of compound adrenaline injections, tablets, or inhalations for asthma? One preparation is advertised as causing a slow rise in blood pressure, whereas another is said to cause a rise rarely and a fall ordinarily. What is the effect of the isopropyl-nor-adrenaline compound?*

A.—Adrenaline when infused intravenously causes some rise of systolic pressure and some fall of diastolic pressure, as shown recently by Barcroft and Konzett (*Lancet*, 1949, **1**, 148). When injected subcutaneously adrenaline has little effect on the blood pressure, and what effect there may be is similar to that of intravenous infusion. Given as a tablet by mouth, or when inhaled as a spray, adrenaline has no effect on the blood pressure as a rule. Isopropyl-*nor*-adrenaline causes a fall of blood pressure even when injected intravenously.

Estimating Basal Metabolic Rate

Q.—*Is Read's formula for estimating the basal metabolic rate reasonably accurate? Are there any other methods of estimating the B.M.R. without cumbersome and expensive apparatus?*

A.—For many years attempts have been made to find a mathematical correlation between pulse pressure and pulse frequency on the one hand and basal metabolism on the other. The earliest formula devised was that of Read (*J. Amer. med. Ass.*, 1922, **78**, 1887). He claimed that if PR is the pulse frequency in beats per minute and PP the pulse pressure in millimetres of mercury, the expression 0.683 (PR+0.9 PP)−71.5 provided a figure which was within 20% of the basal metabolic rate (B.M.R.) in 91% of cases and within 10% in 60% of cases. Two years later he modified his formula to 0.75 (PR+0.74 PP)−72, and claimed that the result of this estimation was within 10% of the correct value in over 50% of cases (*Arch. intern. Med.*, 1924, **34**, 553). Read's data were subjected to statistical analysis by Gale and Gale (*Lancet*, 1931, **1**, 1287), who tested six different formulae and concluded that PR+PP−111 gave the best correlation, with an error not exceeding 20% in 74% of cases. From a study of his own records, Jenkins (*Arch. intern. Med.*, 1932, **49**, 189) suggested that, for males, 0.534 PR+0.436 PP−62.55 and, for females, 0.75 PR+0.57 PP−72 gave the best fit, with a probable error of 9.9% when the Aub-DuBois standards of basal metabolism were used. Bene (*Lancet*, 1949, **1**, 147) has raised the subject again by claiming that a more reliable guide is given by his "RP-Index." To obtain this the pulse and respiratory frequencies per minute are multiplied; the normal range is 1,100–1,500, with a mean of 1,296. The observed RP-Index, when stated as a percentage of the mean normal, lies within 10% of the B.M.R. in about 60% of cases.

These observations prove that there is an imperfect correlation between the B.M.R. and the pulse frequency and pressure. The figures given by the various formulae may give numerical expression to the degree of thyrotoxicosis in a rough fashion, but they are no substitute for careful and accurate estimation of the basal metabolism. In practice the B.M.R. estimation is useful in two situations: first, to confirm the diagnosis when some doubt exists; and, secondly, as a guide to progress. The formulae do not give a sufficiently exact correlation for diagnostic purposes and the patient's progress can usually be assessed by changes in his clinical state, pulse frequency, and weight. Thus Read's formulae and their successors never provide information to which much importance can be attached and if it seems desirable to know the patient's B.M.R. it must be estimated in the usual fashion.

Whooping-cough Vaccine

Q.—*Is it necessary to give booster doses of pertussis vaccine? If so, at what intervals, and in what doses?*

A.—If it is assumed that prophylactic vaccination is effective against whooping-cough, the primary course should be given as early as possible in infancy, since 10 to 20% of children are affected in the first year of life and more than half the deaths occur at this time. Little is known about the value of a booster dose or when it should best be given. Kendrick and his colleagues (*Amer. J. Dis. Child.*, 1946, **72**, 383) found that the defence mechanism, as tested by the opsonocytophagic reaction, was similar in groups of kindergarten children who had their primary vaccine one, two, three, or four years previously, and the antibody response to a further injection was the same in all four groups. The pertussis attack rate during the first two years' attendance at school was 0.7% among 408 immunized children who received a booster dose, 1.2% among 418 immunized children who did not receive a booster dose, and 6.4% among 829 children not previously vaccinated. A booster dose of, say, 1.0 ml. of vaccine would therefore seem to have some value and should be given two or three years after the primary course, or when the child goes to school.

Vitamin B_1 in Diabetes

Q.—*The carbohydrate tolerance of a male patient suffering from diabetes mellitus has improved since 10 mg. of vitamin B_1 were added to the morning and evening injections of insulin. How does vitamin B_1 act on the carbohydrate metabolism in a normal person and in a person suffering from diabetes mellitus?*

A.—This experiment has been tried by others without being followed by any reduction in the dose of insulin required. Experiences of this kind, which others have failed to confirm, have been reported with so many different substances that it is important to consider the reasons for the discrepancies. There are two, and possibly more, explanations: (1) The patient's health was improving at the time of the experiment, and this is responsible for the change in the dose of insulin and not the

new treatment. (2) The patient has been much more careful over the carbohydrate ration as a result of the new treatment, and consequently requires less insulin.

Travel in Italy

Q.—*What instructions should be given to a would-be traveller to Italy and Sicily this August, with special reference to (a) drinking tap-water, (b) inoculations, and (c) the possibility of contracting malaria?*

A.—*(a)* Except in the largest towns the drinking of tap-water should be avoided unless it has been boiled previously. *(b)* It would be as well to be inoculated against typhoid and paratyphoid. *(c)* If the traveller is staying only in the larger towns there is little or no risk of his becoming infected with malaria. If he proposes to stay in small towns or villages or to be in the country in the evenings he should take proguanil 0.1 g. daily during the time that he remains in the country.

Anaesthetics for Domiciliary Midwifery

Q.—*In obstetrics in general practice open ether has the disadvantage of inflammability. To what extent is this a danger—e.g., with open fires, paraffin lamps, etc.? If this is a real contraindication, what is the most satisfactory alternative anaesthetic for single-handed domiciliary obstetrics?*

A.—The danger of using drop-ether in proximity to an open fire is that of burning rather than that of explosion of the ether vapour. Although it is generally stated in the textbooks that a mixture of ether vapour and air is explosive, experts in this field are doubtful whether this is so in ordinary clinical practice. The danger of fire, however, is very real, and is doubly dangerous because the ether vapour burns with an almost invisible flame which may travel some distance without any warning and so set fire to distant inflammable objects. The alternative to ether in domiciliary midwifery is either chloroform or trilene. In view of our pharmacological knowledge of these drugs, trilene seems to be the safer. Adequate analgesia with trilene is easily provided by means of one of the many types of apparatus on the market for the purpose. In one of these (i.e., the Cyprane inhaler) the concentration of trilene inhaled by the patient can be increased, should the anaesthetist desire it, and thus general anaesthesia may be induced. An alternative arrangement is to use any gas–oxygen apparatus and to put the trilene in the ether bottle which is usually to be found on such an apparatus. The strength of trilene vapour delivered from the Freedman inhaler is unlikely (except in patients with very low resistance) to produce general anaesthesia.

Protecting a Stiff Thumb

Q.—*A patient has had an injury which has resulted in ankylosis of the interphalangeal joint of his right thumb. He is a very keen cricketer, and finds now that, although he can hold his bat adequately, his right thumb is exposed to frequent injury while batting. He has asked me whether any metal protectors for fingers which have suffered injury are available, and I could not tell him. Can anything more be done for him?*

A.—This is a problem which can probably best be solved by consultation between the patient and a skilled surgical appliance maker. Almost certainly some suitable protective covering for the thumb could be devised. It is possible that a thumb-stall of relatively soft leather, with steel reinforcement sewn into it along the dorsum and over the tip of the thumb, would be adequate.

Loss of Eyebrows

Q.—*What are the causes of loss of hair from the eyebrows? Is there any effective treatment? A male patient aged 29 has had patchy loss of hair from both eyebrows for the last two months. The patches are absolutely smooth and no broken hair can be seen; the skin in these areas is otherwise normal. There is no itching or soreness.*

A.—This case is almost certainly one of alopecia areata, but the location of the changes makes it important to exclude local factors or irritation, such as infection in adjacent sinuses or teeth or errors of refraction. It is more probable that the affection is merely a reaction in a sensitive patient to some constitutional disturbance following minor infection or metabolic or emotional disturbance. In that event the assessment of the patient in relation to his environment may be important, and the prognosis will be influenced by the patient's past history and family history in relation to alopecia, dermatological affections, and mental health.

It must be remembered that the great majority of cases of alopecia areata are transient and of little significance and recover spontaneously. General treatment is important, and a holiday in new surroundings would probably be beneficial. Local measures are not indicated except perhaps to obscure the bald areas by means of an eyebrow pencil.

NOTES AND COMMENTS

Urticarial Reaction to Penicillin.—Lieutenant-Colonel H. S. ANDERSON, R.A.M.C. (ret.), writes: With reference to the question and answer under this heading (" Any Questions ? " June 4, p. 1016) the questioner may be interested in a personal experience. In March, 1948, I was given four injections of penicillin; the fourth one was given at my request. Nineteen days later urticaria appeared, was personally treated, and remained troublesome for about five weeks. In September, 1948, I received three injections of penicillin. Urticaria occurred on the thirteenth day, accompanied by strangury and haematuria. I was given an antihistamine drug by mouth for four days, but improvement was noticeable within 24 hours, and urine returned to normal rapidly.

Treatment of Asthma.—Major ERNEST SOYSA (Colombo) writes: The association of asthma and leucocytosis in the case mentioned in " Any Questions ? " (April 23, p. 736) raises the interesting possibility of an eosinophilic reaction, even though this patient's previous allergic history may not be typical of the eosinophilic respiratory syndrome common in the Tropics. I have recently seen two similar cases. Both patients were Englishmen in whom leucocytosis had been detected a short time previously in London, neither having derived any lasting benefit from various asthma treatments. I had their differential counts done: one had 15,000 leucocytes per c.mm. with 48% eosinophils, and the other had 17,900 leucocytes with 50% eosinophils. Examination of the sputum of one patient by a special technique[1] revealed tyroglyphid mites. Oral medication with pentavalent arsenic (carbarsone 1 tablet b.d. for five days, repeated after an interval of two days) produced the typical dramatic cure in both patients, who showed the Herxheimer reaction reported previously in the *Journal*.[2] A recent review[3] of a series of asthmatic cases (in Ceylon) with eosinophilia ranging from 1,000 to 50,000 cells per c.mm. disclosed occupational and environmental risks of inhaling airborne mites in 80% of the cases. Detection of mites in 62% of the sputum examinations undertaken was suggestive of pulmonary acariasis and confirmed the original findings[1] that led to this line of inquiry. Three series of control cases subjected to identical sputum tests gave negative results. Pathognomonic appearances of the eosinophilic respiratory syndrome were observed in 50% of the pulmonary radiographs studied. The strikingly effective therapeutic action of organic arsenicals was constant. A few workers in other lands have confirmed observations made in Ceylon on the association of this eosinophilic respiratory syndrome with pulmonary acariasis. Further studies of the aetiology and pathology are necessary, and will doubtless be forthcoming, in view of the world-wide interest that appears to have been created in this remarkable malady.

REFERENCES

1 Carter, H. F., Wedd, G., and D'Abrera, V. St. E., *Indian med. Gaz.*, 1944, **79**, 163.
2 Soysa, E., and Jayawardena, M. D. S., *British Medical Journal*, 1945, **1**, 1.
3 ——, *J.R. Army med. Cps*, 1949, **92**, 1.

Correction.—H. K. Lewis and Co. are not the publishers of *Collected Papers: The Middlesex Hospital Medical School* (June 18, p. 1085).

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